

H 25

5

HD2765

H25 Hartman-
Fair value.

**Southern Branch
of the
University of California
Los Angeles**

Form L-1

HD
2765
H25

DEC 1 1955

330 H 25

This book is DUE on the last date stamped below.

~~LIBRARY BOOK~~

OCT 1 1928

AUG 3 1928

JUN 23 1938

MAY 10 1938

JAN 27 1951

JUN 1 1938

JUN 1 1938

OCT 1 1928

APR 19 1940

MAY

MAY 20 1940 Row.

FEB 19 1929

NOV 6 1928

DEC 12 1930

DEC 2 1940

JAN 6 1941

MAY 30 1940

Hart, Schaffner & Marx Prize Economic Essays

THE CAUSE AND EXTENT OF THE RECENT INDUSTRIAL PROGRESS OF GERMANY. By Earl D. Howard.

THE CAUSES OF THE PANIC OF 1893. By William J. Lauck.

INDUSTRIAL EDUCATION. By Harlow Stafford Person, Ph.D.

FEDERAL REGULATION OF RAILWAY RATES. By Albert N. Merritt, Ph.D.

SHIP SUBSIDIES. An Economic Study of the Policy of Subsidizing Merchant Marines. By Walter T. Dunmore.

SOCIALISM: A CRITICAL ANALYSIS. By O. D. Skelton.

INDUSTRIAL ACCIDENTS AND THEIR COMPENSATION. By Gilbert L. Campbell, B. S.

THE STANDARD OF LIVING AMONG THE INDUSTRIAL PEOPLE OF AMERICA. By Frank H. Streightoff.

THE NAVIGABLE RHINE. By Edwin J. Clapp.

HISTORY AND ORGANIZATION OF CRIMINAL STATISTICS IN THE UNITED STATES. By Louis Newton Robinson.

SOCIAL VALUE. By B. M. Anderson, Jr.

FREIGHT CLASSIFICATION. By J. F. Strombeck.

WATERWAYS VERSUS RAILWAYS. By Harold Glenn Moulton.

THE VALUE OF ORGANIZED SPECULATION. By Harrison H. Brace.

INDUSTRIAL EDUCATION: ITS PROBLEMS, METHODS AND DANGERS. By Albert H. Leake.

THE UNITED STATES INTERNAL TAX HISTORY FROM 1861 TO 1871. By Harry Edwin Smith.

WELFARE AS AN ECONOMIC QUANTITY. By G. P. Watkins.

CONCILIATION AND ARBITRATION IN THE COAL INDUSTRY IN THE UNITED STATES. By Arthur E. Suffern.

THE CANADIAN IRON AND STEEL INDUSTRY. By W. J. A. Donald.

THE TIN PLATE INDUSTRY. By D. E. Dunbar.

THE MEANS AND METHODS OF AGRICULTURAL EDUCATION. By Albert H. Leake.

THE TAXATION OF LAND VALUE. By Yetta Scheftel.

RAILROAD VALUATION. By Homer Bews Vanderblue.

RAILWAY RATES AND THE CANADIAN RAILWAY COMMISSION. By D. A. MacGibbon.

THE CHICAGO PRODUCE MARKET. By Edwin Griswold Nourse.

THE ARBITRAL DETERMINATION OF RAILWAY WAGES. By J. Noble Stockett.

THE RESULTS OF MUNICIPAL ELECTRIC LIGHTING IN MASSACHUSETTS. By Edmond Earle Lincoln.

FAIR VALUE. The Meaning and Application of the Term "Fair Valuation" as used by Utility Commissions. By Harleigh H. Hartman.

A HISTORY OF THE ATLANTIC COAST LINE RAILROAD. By Harold Douglas Dozier.

Hart, Schaffner & Marx Prize Essays

XXVIII

FAIR VALUE

THE MEANING AND APPLICATION OF THE TERM
"FAIR VALUATION" AS USED BY
UTILITY COMMISSIONS

FAIR VALUE

THE MEANING AND APPLICATION OF
THE TERM "FAIR VALUATION" AS USED
BY UTILITY COMMISSIONS

BY

HARLEIGH H. HARTMAN, M.A., LL.M.

LECTURER IN ILLINOIS PUBLIC UTILITIES LAW AT NORTHWESTERN
UNIVERSITY SCHOOL OF LAW, SOMETIME INSTRUCTOR
IN ECONOMICS AT LAKE FOREST COLLEGE



BOSTON AND NEW YORK
HOUGHTON MIFFLIN COMPANY

The Riverside Press Cambridge

1920

35854

COPYRIGHT, 1920, BY HART, SCHAFFNER & MARX

ALL RIGHTS RESERVED

HI
2765
425

TO
JOHN H. WIGMORE
DEAN OF NORTHWESTERN UNIVERSITY SCHOOL OF LAW

PREFACE

THIS series of books owes its existence to the generosity of Messrs. Hart, Schaffner & Marx, of Chicago, who have shown a special interest in trying to draw the attention of American youth to the study of economic and commercial subjects. For this purpose they have delegated to the undersigned committee the task of selecting or approving of topics, making announcements, and awarding prizes annually for those who wish to compete.

For the year ending June 1, 1918, there were offered:

In Class A, which included any American without restriction, a first prize of \$1000, and a second prize of \$500.

In Class B, which included any who were at the time undergraduates of an American college, a first prize of \$300, and a second prize of \$200.

Any essay submitted in Class B, if deemed of sufficient merit, could receive a prize in Class A.

The present volume, submitted in Class A, was awarded first prize in that class.

J. LAURENCE LAUGHLIN, *Chairman*
University of Chicago

J. B. CLARK
Columbia University

HENRY C. ADAMS
University of Michigan

EDWIN F. GAY
N. Y. Evening Post

THEODORE E. BURTON
New York City

Pub. 2.00-1921

NOTE

THE author gratefully acknowledges his indebtedness to Professor J. M. Clark, of the University of Chicago, for kind assistance, careful criticism, and helpful suggestions given in the final preparation of this thesis. Much credit is also due the author's wife for her constant encouragement and coöperation. For all matters of opinion, however, and for the manner of presentation the author assumes complete responsibility.

HARLEIGH H. HARTMAN

SPRINGFIELD, ILL.

April, 1919

AUTHOR'S PREFACE

THE term "fair value" is a scapegoat of the cost theory coined by the courts and adopted by public-utility commissions. The scope of the term is broad, its usage loose. It has been employed in many phases of regulation including rate-making, purchase and sale, security issue, reorganization, tax and government-ownership cases. The "fair value" of the property has varied for each of these purposes. The result has been confusion, misunderstanding, and misuse of the term and much superficial wrangling. There is no real agreement concerning the most fundamental principles of valuation. There is confusion as to terminology, methods, even as to the objects sought.

The causes of this chaos are easily discernible. Two parties, the public and the utilities, are vitally concerned. Both are convinced that their interests are inherently antagonistic. The courts stand arbitrator between them. New issues are presented at a time when the whole political, economic, and legal concept of the relation of government to industry and private property is in a transitional state. The issue has augmented the existing conflict between judicial and legislative functions resulting from new applications of the due-process clause. The sphere of judicial activity at the start of the valuation problem was itself unsettled. No precedents exist to guide the court in its arbitration. Blind groping has resulted. The parties have been unwilling to study the situation more than superficially. The utilities and over-zealous public representatives have framed their words and acts to create opportunities for self-gain, irrespective of the ultimate effects of their policies. The courts seem to have followed the course of least resistance.

Credit for such progress as has been made is due to

the State Public-Utility Commissions. Their efforts, however, have been handicapped by the necessity of trying to prophesy, and shape their opinions to meet, the undefined course of judicial review which persistently refuses to state either the basis upon which it rests or the aims it seeks.

There is little reason to expect either the utilities or public representatives to forget self-interest, voluntarily analyze the problem, and submit an unbiased compromise. The commissions are powerless wholly to clear the confusion superimposed upon the situation by judicial review. The courts can clear the tangle, but before this is possible they themselves must glean a much clearer understanding of the theory of "fair value" than they have thus far incorporated in their decisions. They must accept the task of determining the basis and aims of regulation, and definitely, unambiguously state them.

The study of valuation, in the meantime, must be essentially theoretical. It cannot be worked out from existing decisions alone since they themselves are to be tested by it. Neither can it be worked out independently of them and test them. A twofold division of the subject is suggested, i.e., the theory of "fair value" and the application of the theory to the existing situation. This division has been adopted by the author.

The first part of the treatise considers (1) the problem of public-utility regulation and the characteristics which distinguish it from that of regulation in general; (2) the specific needs it suggests, and the essential elements in a regulatory system which will meet those needs; (3) the development of the valuation theory; (4) valuation as an element in regulation, its compatibility with existing legal concepts, its advantages and dangerous characteristics; (5) "fair value," the type of valuation best suited to public-service regulation and to existing legal rules.

The second part of the thesis applies the general principles formulated in the first part to the actual practice in

commission-valuation cases. To render the results of this study more readily accessible, this part of the subject has been divided in the manner common to prior works on valuation. The leading valuation cases of the several commissions are analyzed, and the rules applied in the principal jurisdictions formulated. These rules are subject to test as to their economic soundness and their conformity to legal requirements. Where a discrepancy appears between commission rule and economic law or legal requirement, it is carefully considered and the author's conception of the expedient means of removing the discord stated.

The thesis attempts to state the theory of fair value, the law, and the practice.

CONTENTS

PART I

THE MEANING OF THE TERM "FAIR VALUE"

CHAPTER I

The Basis of Regulation

I. INTRODUCTORY STATEMENT	3
II. PRIVATE PROPERTY	3
III. LIMITATIONS UPON THE USE OF PRIVATE PROPERTY	5
IV. THE LAISSEZ-FAIRE DOCTRINE	6
V. PRICE ECONOMICS	7
VI. THE GRANGER REACTION	8
VII. MUNN V. ILLINOIS	9
VIII. MONOPOLY AS A BASIS FOR REGULATION	11
IX. THE PUBLIC-INTEREST THEORY	15
X. JUDICIAL RECOGNITION OF THE PUBLIC INTEREST,	20
XI. SUMMARY	25

CHAPTER II

The Purpose of Regulation

I. REGULATION AND PRIVATE INTEREST	27
II. SERVICE REQUIREMENTS	28
III. RATE REGULATION	29
IV. THE SOCIAL SIDE OF REGULATION	29
V. NORTHERN PACIFIC RAILWAY V. NORTH DAKOTA	31
VI. ANTI-MONOPOLY REGULATION	33
VII. THE RECOGNITION OF REGULATED MONOPOLY	34

VIII. THE REASONS FOR THE CHANGE	36
IX. SPECULATION	39
X. EFFICIENT MANAGEMENT	41
XI. FINANCIAL REGULATION	42
XII. ACCOUNTING	43
XIII. SUMMARY	44

CHAPTER III

Valuation and Regulation

I. VALUATION A JUDICIAL THEORY	45
II. THE GRANGER CASES	45
III. THE COMMISSION CASES	48
IV. DOW V. BEIDELMAN	51
V. REAGAN V. THE FARMERS' LOAN AND TRUST COMPANY	55
VI. THE GROWTH OF THE CONFISCATION ANALOGY	57
VII. SMYTH V. AMES	59
VIII. THE CONDEMNATION THEORY	63
IX. SAN DIEGO LAND AND TOWN COMPANY V. NA- TIONAL CITY	71
X. VALUATION AS A TEST FOR INDIVIDUAL RATES	73
XI. THE RECENT DECISIONS	73
XII. SUMMARY	74

CHAPTER IV

The Theory of Valuation

I. VALUATION AND ECONOMICS	77
II. THE MEANING OF VALUE	77
III. THE VARYING USES OF VALUATION	79
IV. FAIR VALUE NOT EXCHANGE VALUE	80
V. VALUATION FOR RATE-MAKING	81
VI. VALUATION FOR PURCHASE AND SALE	88
VII. THE METHODS OF VALUATION	90
VIII. SUMMARY	92

CONTENTS

xvii

CHAPTER V

Valuation Methods

I. THE INVENTORY	94
II. THE ORIGINAL-COST THEORY	97
III. THE REPRODUCTION-COST THEORY	99
IV. DEVELOPMENT OF THE REPRODUCTION THEORY	100
V. THE PURPOSE OF THE REPRODUCTION-COST APPRAISAL	105
VI. ATTEMPT TO DISCREDIT ORIGINAL COST	107
VII. DEFECTS OF STRAINED REPRODUCTION COST	112
VIII. THE ACTUAL-INVESTMENT THEORY	113
IX. THE SUPREME COURT AND REPRODUCTION COST	119
X. SUMMARY	124

PART II

THE APPLICATION OF THE THEORY OF FAIR VALUE

CHAPTER VI

The Valuation of Tangible Property

I. TANGIBLE AND INTANGIBLE VALUES	129
II. PROPERTY NOT USED OR USEFUL	129
III. PROPERTY ACQUIRED WITHOUT COST	133
IV. PROPERTY ACQUIRED FROM SURPLUS	134
V. THE VALUATION OF LAND	138
VI. THE ORIGINAL-COST APPRAISAL	140
VII. APPRECIATION OF LAND VALUES	141
VIII. THE REPRODUCTION-COST APPRAISAL	146
IX. VALUATION OF BUILDINGS	151
X. WATER RIGHTS	153
XI. PAVEMENT OVER MAINS	157
XII. SUMMARY	159

CHAPTER VII

Valuation of Intangible Property

I. OVERHEAD CHARGES	161
II. ORGANIZATION EXPENSES	166
III. PROMOTERS' PROFITS	167
IV. INTEREST DURING CONSTRUCTION	167
V. ENGINEERING AND SUPERINTENDENCE	170
VI. CONTRACTORS' PROFITS	172
VII. DISCOUNT ON BONDS	173
VIII. PIECEMEAL CONSTRUCTION	175
IX. ADAPTATION AND SOLIDIFICATION	176
X. GOING VALUE	177
XI. GOING-CONCERN VALUE	180
XII. GOING VALUE AND EXCHANGE DIFFERENTIAL	181
XIII. "GOOD-WILL"	182
XIV. THE WISCONSIN RULE	184
XV. THE COMPARATIVE-PLANT ESTIMATE OF GO- ING VALUE	186
XVI. GOING VALUE AND THE COURTS	188
XVII. FRANCHISE VALUE	190
XVIII. WORKING CAPITAL	193
XIX. SUMMARY	194

CHAPTER VIII

Depreciation

I. THE THEORY OF DEPRECIATION	196
II. EFFICIENCY AND DEPRECIATION	198
III. JUDICIAL HOLDINGS ON DEPRECIATION	202
IV. SALVAGE VALUE	204
V. DEPRECIATION OF INTANGIBLES	205
VI. ESTIMATED LIFE	206
VII. THE MAINTENANCE PLAN AND APPRAISAL	207
VIII. THE STRAIGHT-LINE METHOD	207
IX. THE DIMINISHING-BALANCE METHOD	209

CONTENTS

xix

X. THE ANNUITY METHOD	210
XI. THE SINKING-FUND METHOD	211
XII. MISCELLANEOUS METHODS	212
XIII. THE COLORADO THEORY OF DEPRECIATION	213
XIV. THE DEPRECIATION RESERVE	216
XV. SUMMARY	218

CHAPTER IX

The Return on the Investment

I. VALUATION AND THE RATE OF RETURN	220
II. THE DEVELOPMENT OF THE RETURN QUESTION	221
III. ELEMENTS INVOLVED IN THE RETURN	222
IV. THE INTEREST ELEMENT IN THE RETURN	224
V. THE RISK ELEMENT IN THE RETURN	225
VI. THE RATE OF RETURN	227
VII. DUPLICATION IN VALUATION AND RETURN	229
VIII. REWARD FOR EFFICIENT MANAGEMENT	229
IX. ALLOWANCE FOR SURPLUS	231
X. SUMMARY	231

CHAPTER X

CONCLUSION	233
SELECTED BIBLIOGRAPHY	237
TABLE OF CASES	241
INDEX	253

FAIR VALUE

PART I

THE MEANING OF THE TERM "FAIR VALUE".

FAIR VALUE

CHAPTER I

THE BASIS OF REGULATION

I. *Introductory Statement*

The primary question in regulation is the legal and economic status of private property. To discuss valuation without considering the nature of public-utility property, the reasons for its control, and the aims of regulation would be to argue the expediency of means without knowing the ends sought. This fallacy has characterized most discussion of valuation. There has been no attempt to decide fundamental issues. It seems advisable, therefore, even at the risk of criticism for using primer methods and covering ground already trodden, to begin with a consideration of the status of "private property devoted to a public use."

II. *Private Property*

The term "private property" is a misnomer. There is no strictly private interest in property enjoyed to the complete exclusion of all other interests. This point cannot be too strongly emphasized, for therein lies the basis of all regulation affecting property rights.

Property has been defined as "the right and interest which a man has in lands and chattels to the exclusion of others." The word "right" is used collectively. Man has many rights relative to the object he is said to own, which combined constitute his property in the object; i.e., the right of possession, the restricted rights of consumption, use, and disposal by sale, gift, loan, or rental. Property is a bundle of rights, the units of which are constantly changing with economic changes and their legal recognition.

Property as distinct from possession implies exclusive control. Such control can exist only by consent of the State. The sanction of society and force of government are necessary to protect the owner's interest. The presence of an organized social state is essential to the existence of private property. It is purely a social concept, and the rights constituting property at any given time depend upon social arrangements sanctioned by the State with a view to the general welfare.

Private property, irrespective of the theory of its origin, is shaped by two conflicting forces giving it both a social and an individual side. Individuals are permitted to acquire rights protected by the State, because such permission promotes the public welfare. The private interest, however, is held in subordination by the State police power, in order that the exclusive control thus created may in reality promote the common good. The social interest on which the whole structure rests limits the owner in his use of the property. All property is acquired and held under the limitation of the common-law maxim, "*Sic utere tuo ut alienum non lædas*," that it shall not be used in a way injurious to the rights of others nor to impair the public rights. The State does not create unrestricted private property rights in objects which affect or influence the public welfare. The public interest in such property must be protected or the excuse for government sanction of the private interest destroyed. The so-called absolute property rights are but privileges relative to, and limited by, the common good. The individual and the public interest, though independent, attach to the same object and blend. The individual is so related to society that his interest is one with that of the group. The social interest is as necessary to private property as the individual interest, and individual rights can be protected only by development of the public interest. The individual right is a right to use private property in the interest of the community. Regulation compels such use of the property.

The two forces moulding private property, because one limits the other, are antagonistic. The elements which make the social side essential necessitate the domination of the social over the individual element in the conflicts which result. The tendency, therefore, is toward an ever greater public element in private property. Each new conflict ultimately results in additional gain for the social side of the property. Regulation based on valuation is such a conflict.

III. *Limitations upon the Use of Private Property*

All private property is held conditionally. The owner must so use it as not to injure others. It is apparent that the danger of, and opportunity for, such injury must vary both in form and degree with the use to which the property is put. The State in seeking to protect the public interest must impose different forms of regulation upon the different uses of the property. The bundle of rights constituting property changes with the use, becoming more or less encumbered, acquiring or losing unit rights as the use promotes or endangers the public welfare. Property used in connection with slaughter-houses, pest-houses, and manufacture of explosives is subjected to stringent regulation to promote the public health. The same property used for saloon or questionable lodging-house purposes would be subjected to other forms of regulation with a view to promotion of the public morals. This property used for strictly residence purposes would meet with but little governmental interference. Devoted to a public use and employed in the conduct of a public-service business, the property is subjected to regulation drafted primarily to promote the economic welfare of the public.

Public-service corporations have always been classified separately in American law. Private property employed in the public service has always been subject to restrictions in the interest of the public. The social side of the property has always been more prominent than the strictly private

interests. The emphasis on the public interest in such property and the accompanying distinction between utilities and other industry is based on the common law and antedates the establishment of the colonies.

IV. *The Laissez-Faire Doctrine*

The regulation and restriction imposed by the Government on private property devoted to a public use in addition to that imposed on all private property, and consequently the bundle of rights composing private property in such a use, undergo constant change. The political, social, and economic order is slowly but continually shifting. The private rights and the public interest increase or decrease to meet economic and social conditions. From the middle of the eighteenth century to 1870 private interests predominated. Economic conditions in America throughout the colonial period and the early days of the Republic did not justify emphasis on the difference between property employed in the public service and that devoted to a strictly private use. The differentiation and the corollary power of regulation, therefore, remained dormant, and a strict *laissez-faire* policy was adopted.

A vast, thinly populated territory lay open to development. Governments were new and overburdened. Heavy taxes could not be collected. Innumerable local improvements were needed. The very vastness of the land, which rendered transport and communication facilities necessary, made them more difficult to secure. Private capital was the only means available for the work. Every effort was made to encourage its investment in enterprises which would develop the land.

The territory to be served was too broad, the capital required too great, the demand for other improvements too pressing to justify viewing the encroachment of individual initiative with feeling other than relief. The situation was not complex. The corporation was in its infancy. The terri-

tory served by, and the capital invested in, each utility was small. Competition between utilities and with substitute service was abundant, and the prevailing public opinion regarded competition as a panacea for all industrial ills. There was little to fear, much to be gained, from stimulation of private enterprise.

The legislatures responded to the demands of the time by giving private enterprise an entirely free hand, and extending active aid to those who could be induced to undertake the work. The power of eminent domain was granted and liberally construed. Public lands were freely given. Public funds were invested in the securities of the companies or given to the promoters outright. Charters and franchises were lavishly bestowed and prodigally drafted. Every effort was put forth to make the undertaking an inviting speculation. The public nature of the enterprises was widely advertised, and persons investing in them were heralded as public benefactors.

The policy was not restricted to public-service companies. All industry flourished under the *laissez-faire* system. Individualism was supreme. Private interests were emphasized, and private property enjoyed a legal status theretofore and since unknown.

V. *Price Economics*

The result of the *laissez-faire* policy was a reorganization of economic theory upon an emphasized private-property basis. Pursuit of individual gain and production for exchange became the dominant factors in industry. An exchange economics was worked out, centering on price, the medium of exchange. Price became the all important factor in industry. The theory of price underlies all economic theory of the period.

The economic system which emphasized individual gain and exchange price was bound to produce undesirable results when applied to the public service. The public interest

in the undertaking received no consideration in such an economic system. The social side of private property was subordinated to the individual side and lost sight of. The public interest in the service was secondary to private gain. Reasonable rates were replaced by market price. The basis of private property, the excuse for its creation and maintenance, was overlooked.

VI. *The Granger Reaction*

It was inevitable that application of price economics to the public service, the mania for development and the accompanying opportunities for enrichment of private, at the expense of public, interests afforded by the *laissez-faire* policy should produce wholesale evils. Shippers demanded and received rebates. Discriminations were granted and accepted. Utility operators, promoters, investors, and consumers vied to squeeze the opportunity dry.

It was equally inevitable that the abuses of the period should produce a reaction. Changed economic conditions, the growth of the factory system, the congestion of population in urban districts, and the increase of wealth rendered a continuation of the *laissez-faire* policy dangerous. Stringent legislation became necessary to make property rights serve the purpose for which they were created, the promotion of the public welfare; to offset the undue emphasis of the private side of property by the *laissez-faire* policy; and to substitute an economics based on public interests and reasonable charges rather than private gain and prices fixed by individualistic enterprise and free bargain.

The revolt started in the West as a clamor for a renewal of governmental control, a reassertion of the public interest, and a reaffirmation of the purpose of property rights. The acute need of development and the absolute dependence upon the utilities for connection with markets and industrial centers, had made that section the harvest field of unscrupulous promoters and had forced utility problems to

the front. The five years preceding 1870 produced a complete change in public opinion. Indignation was aroused. The Patrons of Husbandry, or Grange, served as a medium to spread the discontent; and it rapidly developed, under railway defiance of public interests, into rabid prejudice.

The rate issue was the most vital. The *laissez-faire* policy had resulted in the establishment of monopoly prices at all non-competitive points and discriminatory charges based on a competitive exchange price elsewhere. Reasonable rates were unknown. To correct the situation a wave of maximum-rate legislation swept the Middle West. The utilities, championed by the railways, contested the constitutionality of the laws. The issue was the sacredness of the private-property interests which the *laissez-faire* policy had emphasized without due regard to the purpose of property rights. The question was carried to the Federal Supreme Court and the State's right to regulate, to confine property rights to their proper sphere, was upheld in the Granger Cases.¹ A movement was thus inaugurated which has revolutionized the relation of government to industry.

VII. *Munn v. Illinois*

In *Munn v. Illinois*,² the principal Granger Case, the latent power of regulation was revived. The public utility was again singled out from other industries and subjected to regulation. The case came before the Court on the question of the constitutionality of an Illinois law fixing the charges for warehouses. The prime problem was to justify the segregation of warehouses from other industries for

¹ There were eight Granger cases arising from the maximum rate laws of the Mid-Western States. All save the *Munn* Case involved railway regulation. They were: *Munn v. Illinois*, 94 U.S. 113, 24 L. ed. 72; *Chicago, Burlington & Quincy R.R. Co. v. Iowa*, 94 U.S. 155, 24 L. ed. 94; *Peik v. Chicago & Northwestern Ry. Co.*, 94 U.S. 164; *Chicago, Milwaukee & St. Paul Ry. Co. v. Ackley*, 94 U.S. 179; *Winona and St. Peter R.R. Co. v. Blake*, 94 U.S. 180, 45 L. ed. 99; *Southern Minnesota R.R. Co. v. Coleman*, 94 U.S. 181; *Stone v. Wisconsin*, 94 U.S. 181, 24 L. ed. 102.

² 94 U.S. 115, 24 L. ed. 72.

regulatory purposes. The propriety of applying the *laissez-faire* policy to other industry was not questioned. The fact that the sanctity of the emphasized private rights in property in general was still unchallenged rendered the problem difficult. The way, however, had been paved for the decision by the Supreme Court's holding in the case of *Olcott v. The Supervisors*,¹ that irrespective of the private ownership of the property a railroad is a public highway performing a governmental function for which it is paid by being granted the right to exact reasonable tolls.

The Munn decision accepts the theory of the *Olcott Case*.² The private property of the utility operator is em-

¹ 16 Wall. 695; 83 U.S. 678. "It has never been considered a matter of any importance that the road was built by the agency of a private corporation. No matter who is the agent, *the function performed is that of the State*. Though the ownership is private, the use is public. . . . That railroads, though conducted by private corporations and owned by them, are public highways has been the doctrine of nearly all the courts ever since such conveniences for passage and transportation have had any existence. . . . And the reason why the use has always been held a public one is that such a road is a highway, whether made by the Government itself or by the agency of corporate bodies, or even by individuals when they obtain their power to construct it from legislative grant.

"So turnpikes, bridges, ferries, and canals, although made by individuals under public grants, or by companies, are regarded as *publici juris*. The right to exact tolls or charge freight is granted for a service to the public. . . .

"*They [highways] have always been governmental affairs and it has ever been recognized as one of the most important duties of the State to provide and care for them. . . . It is said that railroads are not public highways per se: That they are only declared such by the decisions of the courts, and that they have been declared public only with respect to the power of eminent domain. This is a mistake. In their very nature they are public highways. It needed no decision of courts to make them such. True they must be used in a peculiar manner, and under certain restrictions, but they are facilities for passage and transportation afforded to the public, of which the public has a right to avail itself. As well might it be said a turnpike is a highway, only because declared such by judicial decision. A railroad built by the State no one claims would be anything else than a public highway, justifying taxation for its construction and maintenance, though it could be no more open to public use than is a road built and owned by a corporation.*"

² "Looking, then, to the common law, from whence came the right which the Constitution protects, we find that when private property is

ployed in a public business for the private purpose of making individual gain. But because the business affects the welfare of the whole community, the private interest in profits is subordinated to the public interest. The property remains private so far as title is concerned, but loses its status as strictly private property. The bundle composing private property is changed. Some of the unit rights are lost. The bundle is decidedly smaller. An encumbrance is placed upon the property as real as that created by dedication. It must be used subject to governmental supervision, and primarily to promote the public welfare by rendering continuous, adequate service without discrimination and at reasonable rates. The charges, representing both rental or interest and pay for conducting the enterprise, must be such as will promote the public good. The property has been shorn of the power it possessed, under the *laissez-faire* theory, of producing all the profit unrestricted conditions would afford. The promotion of the general economic welfare which first created private property rights and then ordained that they be given free sway to provide incentive for development, now demands that they be limited. Absolute freedom has ceased to promote the common good. Regulation becomes necessary.

VIII. *Monopoly as a Basis for Regulation*

The reference to monopolistic power and citation of *Aldnut v. Inglis* ² in the *Munn Case* gave rise to an attempt affected with a public interest it ceases to be *juris privati* only. . . . Private property does become clothed with a public interest *when used in a manner to make it of public consequence, and affect the community at large*. When therefore one devotes his property to a use in which the public has an interest, he, in effect, grants the public an interest, in that use, and must submit to be controlled by the public *for the common good*, to the extent of the interest he has thus created. He may withdraw his grant by discontinuing the use; but so long as he maintains the use, he must submit to the control. . . .

"They [the warehouses] stand, to use the language of their counsel, in the 'gateway of commerce,' and take toll from all who pass. Their business most certainly tends to a common charge, and is become a thing of common interest and use."

² 12 East. 527.

to base regulation upon the monopolistic tendency in the public-service business. The public mind has been directed from the public nature of the undertaking toward the monopolistic theory of regulation and the sanctity of private property.

Reference to monopoly cannot, unaided, explain public-utility regulation. Such an explanation is superficial and goes only halfway into the question. It does not explain why the State may regulate a monopolistic business. It fails to show why utility regulation differs from that applied to banks, insurance companies, and other monopolistic enterprises. It determines neither the basis nor the aims of regulation. The monopolistic theory of regulation is a survival of the *laissez-faire* economic system. It is a compromise not in accord with the present regulatory theory, and does not meet the issue squarely.

Monopolistic power in any business has been recognized as necessitating governmental regulation since the early days of the common law. Monopoly was especially repugnant to the judicial and economic theories based upon competition as a regulatory force. There was a latent, inherent power of harm seen in monopoly. Its threat prices were feared, and monopolistic practices were considered as necessarily contrary to the public welfare.

It is doubtful, however, whether the common law subjected an industry to rate regulation on the ground of monopoly alone. It is certain that it did not conceive of limitation of profits as distinct from prices, nor of service, financial, and general economic regulation as a corollary to a monopolistic tendency. Monopolies were regulated, but always upon a basis wholly distinct from that justifying and directing public-service company control.

Monopoly may justify regulation. It may emphasize the public nature of a utility business. But it, unaided, cannot create a public calling from a private enterprise, or give rise to the "public interest" of the Munn Case.

A banking or insurance company may enjoy a complete monopoly while a neighboring telephone company struggles with a vigorous competitor, yet the telephone company is a public utility and its monopolistic neighbors retain their private status. A carrier may secure complete control of the most remunerative local traffic by private contract without engaging in a public-service undertaking. The completeness of his control over the industry may even force out of business competitors who had undertaken the public service without altering the private character of his business.

Reference to monopoly is equally ineffective in explaining the aims of regulation. An order prohibiting the invasion of occupied territory or permitting a consolidation or merger cannot be characterized as a eulogy of competition or an elegy for monopoly. In rate-making the aim is the true normal price, which because of the waste of competition is invariably below the competitive figure. The whole stress of regulation is to enforce charges not to the competitive point, i.e., cost in the most disadvantageously located and unskillfully operated plant that can survive during any prolonged period, but beyond that point to the plane of the most advantageously located and skillfully managed plant that the locality is capable of supporting. Regulation, in the case of public utilities, is more than a substitution for competition. It must enforce the economies in production that competition has never been powerful enough to compel. It must avoid the waste of duplication and it must eliminate the uncertainty and speculation of competitive production. It substitutes the knowledge and judgment of the Government for that of a competitor potential or real. Its aim is promotion of the public good rather than promotion of the interest of an individual competitor. It is moved by forces which never come into play in a strictly competitive industrial organization.

Monopoly, for the most part, plays the same rôle in the

public-service field that it does elsewhere in industry. Its economic advantages are recognized, its evil forces held in check. Because utilities are by nature best operated as monopolies, that form of organization is sanctioned for them. Where regulated monopoly fails to provide adequate service at reasonable rates, however, competition is called upon for aid.¹

The different part which monopoly plays in the utility and industrial field is rather a difference in the aims than in the basis of regulation. Because the service is governmental, because its public character² emphasises the undesirability of duplication, the aim of utility regulation is to encourage monopoly. In the general industrial field where the public interest is not so intense, where the uncertainties of competitive production are less disastrous, the aim of regulation is to encourage large-scale production but upon a competitive, not a monopolistic, basis. Competition is not harmful to the public welfare and is made a part of the regulatory system just as it is in utility control when other regulation fails because a company is unwilling or unable to render adequate service. The point is that the public welfare demands a different form of regulation in the case of utilities not because competition is impossible, but because it is undesirable. More rigid regulation is necessary in the public service than elsewhere, not because monopoly is more dangerous or more apt to be present, but because the undertak-

¹ Re Coles Co. Tel. & Telg. Co., Ill. Pub. Utilities Comm. No. 7280, 7313; Re Northampton Co., Water Co. (Pa.) P.U.R. 1917-E-939; Re Cayuga Power Corp. (N.Y.) P.U.R. 1917-E-915; Re Poy Sippi Tel. Co. (Wis.) P.U.R. 1917-B-469; Vogt v. Linden Tel. Co. (Wis.) P.U.R. 1917-A-614; Allegheny Valley St. R.R. Co. v. Greco (Pa.) P.U.R. 1917-A-723, etc.

² "Natural monopoly" when analyzed seldom means real inability to duplicate service. It means simply that the common weal will be better served by a single system than by duplication. The public welfare is the basis of the idea of natural monopoly. Few utilities are strictly monopolistic in the sense that duplication or competitive substitute service is really impossible. Though duplication would involve a real disadvantage, the advantages of location are scarcely more pronounced in the utility field than elsewhere.

ing is governmental, because the service must be guaranteed, and centralized control is advantageous. There is a socialistic element present that does not exist in the regulation of other industries.¹ The industry regulated cannot be left to the uncertainties of competition. Utility commissions have repeatedly found themselves compelled to deny the voluntary petitions of utility companies for permission to discontinue service. Adequate, continuous, efficient service must be enforced at a price low enough to insure its general use. The public has an interest not only in the service, but in the profit, which is not created by monopoly.

IX. *The Public-Interest Theory*

The attempt to base the decision in *Munn v. Illinois* primarily upon the monopoly theory is superficial, misleading, and unjustifiable. That case and its cited authority, if one will pause to go below the language of the opinions, clearly premises the regulation of public-service companies on the public nature of the business which, because the welfare of the community at large is at stake and the State is forced practically to guarantee the service, both as to quality and price, assumes the character of a governmental function.²

¹ The recent abnormal cost of producing public-utility service has emphasized this phase of the question. The practical impossibility of compelling prolonged service by a private company at less than cost forced Massachusetts to revert to subsidies and spread the cost of street-railway service by general taxation in an effort to maintain adequate service and keep rates at a point which would permit universal use of the service. Regulation considered the general need and the governmental character of the service not monopoly prices.

² The courts have repeatedly pointed out the governmental character of the service rendered. "*A railroad once constructed is instantane-ly, and by mere force of the grant and law, embodied in the governmental agencies of the State and dedicated to the public use, all and singular its cars, engines, right of way and property of every description, real, personal, and mixed, are but a trust fund for the political power. The corporation created by sovereign power expressly for this sole purpose and no other, is in the most strict, technical, and unqualified sense, but its trustee. This is the primary and sole motive for its creation. The incidental interest and profit of individuals are accidents both in theory and in practice.*" *Talcott v. Pine Grove*,

The construction and maintenance of transportation agencies and the provision of adequate water and lighting systems is a public duty. The power of the State to conduct the service is unquestioned. When the State waives its right to serve and an individual assumes the duty, he volunteers to do the work of the State. The basis of regulation is to be found in the governmental nature of the service.

The service, because it is a common necessity and the supply is so limited as to be capable of control by a few persons, becomes a right of the public subject only to certain general conditions applicable to all alike. Control of that right is "farmed out," by way of franchise privileges, to individuals. The Government waives its right to conduct the undertaking, but cannot waive its responsibility for the service rendered. The social side of the private property devoted to the public use necessarily becomes dominant. The Munn Case and subsequent decisions recognize this fact. The monopoly element is introduced into the decisions

1 Flipp. (U.S.) 120; "A railroad corporation is created for public purposes and *performs a function of the State*, and is under governmental supervision and control," *Culver v. St. Joseph & G. I. Ry. Co. (Mo.)* P.U.R. 1917-B-542, 554; "The duties, functions, and property of railroad corporations are held in trust by the corporation for the public, and the sovereign power regulates such corporations as its trustee," *People v. N. Y. C. & H. R.R.* 28 Hun (N.Y.) 543; see also Smalley, *Railroad Rate Control*, pp. 13-21; "*The creation of all highways is a public duty. Railroads are highways. The State may build them. If an individual does the work he is pro tanto doing the work of the State.* He devotes his property to a public use. The State doing the work fixes the price for the use. It does not lose the right to fix the price because an individual voluntarily undertakes to do the work," *Budd v. New York*, 143 U.S. 549, 12 Sup. Ct. 468; "A railroad corporation is an artificial person, created by positive law, and invested with franchises involving specific powers and privileges, *conferring some of the attributes of sovereignty*, to be exercised primarily for the benefits and advantages of the public," *Bradley v. Ohio River, etc., R.R. Co.*, 78 Fed. 387; *Olcott v. The Supervisors*, 16 Wallace, 695, 83 U.S. 678; *Munn v. Illinois*, 94 U.S. 113, 24 L. ed. 72. See also *Railroad Commission v. P. & O. C. R. Co.*, 63 Me. 269; *Banker v. L.I. R.R. Co.*, 89 Hun (N.Y.) 202; *Beckman v. Saratoga, etc., R.R. Co.*, 3 Paige, 45; *Bloodgood v. Mohawk and Hudson R.R. Co.*, 18 Wendell, 1; *Worcester v. R.R. Co.*, 4 Metcalf, 504.

to state the aims, not the basis, of regulation. Monopoly in the Munn Case merely emphasized and pointed out the public nature of the business.¹ Any serious threat against the availability or extent of any essential service, whether by way of competitive strife and duplication, excessive cost of production, or monopolistic prices and limitation of service for monopolistic gain is sufficient to create a "public interest."

The public nature of certain industries, re-enunciated in the Munn and Olcott Cases, has been recognized from the earliest stages of governmental development. Usually government ownership and operation have preceded the delegation of authority to private individuals. The quasi-private nature of the public business has developed since private wealth has been accumulated in large amounts and public needs have grown faster than government resources.

Highways, inns, and water-supplies have always been government industries. The Hindoos, Babylonians, Assyrians, Phœnicians, Persians, and other ancient peoples developed extensive highways, lined them with trees, set mile-stones, and provided inns, resting-places and wells for travelers. The antiquity of public water systems is testified to by the great aqueducts of Rome and the ancient public wells.

A thousand years ago China developed a network of State canals. Three centuries before, an Egyptian king

¹ An attempt has been made by some writers to base regulation upon the franchise privilege, the grant of the power of eminent domain, and State aid. These privileges, however, like regulation itself, are but a result of the public nature of the business. The undertaking is not public because such concessions are granted. The privileges are extended and regulation is enforced because the business is public. Property acquired by condemnation proceedings and used under franchise restrictions in a privileged undertaking is, of course, subject to an appreciable encumbrance which directly affects its use and value. The fundamental basis of this encumbrance, however, is the public interest which justifies both the use of eminent domain and the franchise grant.

constructed the Suez Canal. The Royal Canal uniting the Tigris and Euphrates was completed about 600 B.C. The Moors built artificial government waterways in Spain. Alexander the Great covered Egypt with a network of waterways, and Marius and Claudius constructed government canals in Rome. The public character of artificial waterways has always been predominant.

The coming of the turnpike and railway did not alter the nature of the undertaking. Improvements in the highways only served to emphasize the public character of the transportation service. Many more of the State's subjects became directly affected. The need for means of communication became greater. The utility of the service to the Government increased. The relation of the transportation system to the distribution of wealth, to all industrial activities, to all orderly human relations, and to the progress and welfare of the State became more complex. The governmental character of the service became more apparent.

The telegraph, telephone, express, bus-line, and pipeline possess the same characteristics which made the older means of transportation public. The utilities furnishing transport and other communication service form the physical basis and instrumentality of all modern political, social, and economic organizations. They underlie every governmental, industrial, and social institution. Without them it would be impossible to build or maintain a prosperous community or extensive industrial organization. Their existence in a permanent, adequate, well-organized form is scarcely less important to Government to-day than sovereignty itself. They are the military, political, economic tools of the Government. Their construction, maintenance, and conduct, be it by private individuals or public officials, is essentially a public function, a part of the State's police power based, not alone upon the ministrations to the public welfare, but upon public safety and necessity.

The same general characteristics determine the status of

the wharfinger and the warehouseman. And the considerations which made the water system a public utility have placed the gas and electric systems in that class. Storage is communication between time factors, and the services it renders have come to play almost as important a part in modern industry as those rendered by other communication utilities. Warehousing, on account of its relationship to transportation and to the supply of limited necessities, has a public interest — the specific interest involved in the Munn decision. Utilities supplying necessities, such as water, light, and heat from a common source, are as essential to the safety and welfare of the community, under the modern system of industrial and social organizations, as communication itself. Unimportant sections may do without either service, but it is impossible to conceive of a modern metropolis with individual water supplies, lighted by candles or oil lamps, heated by stoves or ranges. The urban life, made possible by the development of the communicating utilities, has emphasized the public character of and developed new forms of the limited necessities utilities.

Those attributes denominated “public interest” in the Munn Case are found in the final analysis of all public utilities. All are necessary to the public welfare to such an extent that the State, to reach its own complete development, must supply the service they render or a substitute for it. The governmental function, i.e., the guarantee of the service, with the power to operate if necessary, as opposed to the exercise of the function, has never been delegated and cannot be delegated without violation of legal principles.¹

¹ *Goezler v. Georgetown*, 6 Wheat. 593; *E. Hartford v. Hartford Bridge Co.*, 10 How. 511; *Boyd v. Alabama*, 94 U.S. 645: “The right to regulate the charges of railroads for transportation is one of the powers of the State, inherent in every sovereignty, to be exercised by the legislature from time to time at its pleasure, and hence one legislature cannot, by a charter granted to a railroad company, though for valuable consideration, confer on such railroad company a right to charge rates for transportation which shall be beyond the control of subsequent legislatures.” *Laurel Fork & S.H.R. Co. v. West Virginia Trans. Co.*, 25 W.Va. 324: “The legislature

Expediency alone has directed the waiver of the right to serve by the State to private capital. Necessity has reserved to the State the right to regulate.

X. *Judicial Recognition of the Public Interest*

That point in the *Munn* decision which recognizes the public nature of the utility business and the resulting power of regulation has been affirmed by the Supreme Court in a long line of cases.¹

cannot, by any contract, divest itself of the power to provide for the objects (preservation of good order and the public morals). They belong emphatically to that class of objects which demand the application of the maxim, '*salus populi suprema lex*'; and they are to be attained and provided for by such appropriate means as the legislative discretion may devise. That discretion can no more be bargained away than the power itself." *Boston Beer Co. v. Massachusetts*, 97 U.S. 25, 33; *Stone v. Mississippi*, 101 U.S. 814, 25 L. ed. 1079; *Butchers' Union Slaughter House Co. v. Crescent City Live Stock Landing Co.*, 111 U.S. 746, 16 Wall. 36; *New York & N. E. R.R. Co. v. Bristol*, 151 U.S. 556, 14 Sup. Ct. 437, 38 L. ed. 269; *Pearsall v. Great Northern Ry. Co.*, 161 U.S. 646, 16 Sup. Ct. 705; *St. Louis & S. F. R.R. Co. v. Mathews*, 165 U.S. 1, 17 Sup. Ct. 243, 41 L. ed. 611; *New Orleans Gaslight Co. v. Drainage Comm.*, 197 U.S. 453, 25 Sup. Ct. 471; *Northern Pacific R.R. Co. v. Duluth*, 208 U.S. 583, 28 Sup. Ct. 341, 52 L. ed. 630; *American Union Tel. Co. v. Western Union Telg. Co.*, 67 Ala. 26; *Birmingham Mineral R.R. Co. v. Parsons*, 100 Ala. 662, 13 So. 602; *Danville v. Danville Water Co.*, 178 Ill. 299, 53 N.E. 118, 60 Am. St. Rep. 304, and 180 Ill. 235; *Rogers Park Water Co. v. Fergus*, 178 Ill. 571, 53 N.E. 363; *Freeport Water Co. v. Freeport*, 186 Ill. 179, 57 N.E. 862; *Venner v. Chicago City R.R. Co.*, 246 Ill. 170; *Public Service Comm. of Montana v. City of Helena*, 52 Mont. 527, etc.

¹ *Spring Valley Water-Works v. Schottler*, 110 U.S. 347, 4 Sup. Ct. 48, 24 L. ed. 173; *Wabash, etc., R.R. Co. v. Illinois*, 118 U.S. 557; *Dow v. Beidelman*, 125 U.S. 680, 8 Sup. Ct. 1028; *Georgia R. & Banking Co. v. Smith*, 128 U.S. 174, 9 Sup. Ct. 47, 32 L. ed. 377; *Chicago, Mil. & St. P. R.R. Co. v. Minnesota*, 134 U.S. 418, 10 Sup. Ct. 462; *Chicago & G. T. R.R. Co. v. Wellman*, 143 U.S. 418, *Reagan v. Farmers' Loan & Trust Co.*, 154 U.S. 362, 14 Sup. Ct. 180, 38 L. ed. 1014; *St. Louis & S. F. R.R. Co. v. Gill*, 156 U.S. 649, 15 Sup. Ct. 484, 39 L. ed. 567; *Covington & L. Turnpike R.R. Co. v. Sanford*, 164 U.S. 578, 17 Sup. Ct. 198; *Smyth v. Ames*, 169 U.S. 466, 18 Sup. Ct. 418, 42 L. ed. 819; *Lake Shore, etc., Ry. v. Ohio*, 173 U.S. 285, 19 Sup. Ct. 465, 43 L. ed. 702; *San Diego Land & Town Co. v. National City*, 174 U.S. 739, 19 Sup. Ct. 804, 43 L. ed. 1154; *Chicago, Mil. & St. P. R.R. Co. v. Tompkins*, 176 U.S. 167, 44 L. ed. 418, 20 Sup. Ct. 336; *Michigan Central R.R. Co. v. Michigan R.R. Comm.*, 236 U.S. 615, 59 L. ed. 750.

In the case of *Brass v. North Dakota*¹ the Court took up the issue where it had left it in the *Munn* decision and thrashed out the monopoly doctrine of regulation. In the face of able argument by counsel and a strong dissenting opinion based squarely on the theory that virtual monopoly is necessary to warrant governmental regulation, under the doctrine of the *Munn* Case, the Court held that it is the public nature and not the monopolistic character which justifies control of a business as a public utility.²

In *Budd v. New York*,³ in a suit brought to test the con-

¹ 153 U.S. 391, 14 Sup. Ct. 857, 38 L. ed. 757, 4 I.C.C. Rep. 670.

² A similar stand had been taken by the Supreme Court of Kentucky even before the *Munn* decision in *Nash v. Page*, 80 Ky. 539, 44 Am. Rep. 490, where it was held that the warehousing of tobacco was a public business because of the importance of the tobacco industry to the State and the power exercised over the industry by the warehouses. The question of monopoly was not brought into the case. It turned squarely on the public function theory. See also *Delaware, etc., R.R. v. Central Stock Yd. Co.* 45 N.J. Eq. 50, 6 L.R.A. 855; *Belcher, etc., Co. v. St. Louis Grain Elevator*, 101 Mo. 192, 13 S.W. 822, 8 L.R.A. 801; *McCullough v. Brown*, 41 S.C. 247; *Stewart v. Great N. Ry.*, 65 Minn. 517; *Rippe v. Back*, 56 Minn. 108; *Vega S.S. Co. v. Consol. Elev. Co.*, 75 Minn. 312, 77 N.W. 973, 43 L.R.A. 843, 74 Am. St. Rep. 484; etc.

³ 143 U.S. 547, 12 Sup. Ct. 468. The Court quoted the decision of the lower court with approval, thus: "It affirmed that while no general power resided in the legislature to regulate private business, prescribe the conditions under which it should be conducted, for the price of commodities or service, or interfere with the freedom of contracts and while the merchant, manufacturer, artisan and laborer under our system of government, are left to pursue and provide for their own interests in their own way untrammelled by burdensome and restrictive regulations, which, however common in rude and irregular times, are inconsistent with constitutional liberty, yet there might be special conditions and circumstances which brought the business of elevating grain within principles which, by the common law and the practice of free governments, justified legislative control and regulation in the particular case, so that the statute would be constitutional; that the control which, by common law and by statute, was exercised over common carriers, was conclusive upon the point that the right of the legislature to regulate the charges for service in connection with the use of property, did not depend in every case upon the question whether there was a legal monopoly or whether special governmental privileges or protection had been bestowed; that there were elements of publicity in the business of elevating grain which peculiarly affected it with a public interest; that those elements were found in the nature and extent of the business, its relation to the com-

stitutionality of a New York statute fixing warehouse rates, the Court sustained the Munn Case, holding it in conformity with the Brass decision. The public nature of the business, not the monopolistic tendency, was held to govern. The decision, however, adds little to the previous holdings.

In *Cotting v. The Kansas City Stock Yards et al.*,¹ the Court for the first time since the *Olcott* Case distinguishes clearly between a private business subjected to regulation and a public business privately conducted. After reviewing in detail the long line of decisions upholding the Munn Case the Court said:

In the light of these quotations, this may be affirmed to be the present scope of the decisions of this Court in respect to the power of the legislature in regulating rates as to those individuals and

merce of the State and country and the practical monopoly enjoyed by those engaged in it . . . that in view of the foregoing exceptional circumstances, the business of elevating grain was affected with a public interest within the language of Lord Chief Justice Hale, in his treatise *De Portibus Maris* (Haig, *Law Tracts*, 78), that the business fell within the principle which permitted the legislature to regulate the business of common carriers, ferrymen, and hackmen, and interest on the use of money, and that the underlying principle was that business of certain kinds holds such a peculiar relation to the public interest that there is superinduced upon it the right of public regulation; and that the court rested the power of the legislature to control and regulate elevator charges upon the nature and extent of the business, the existence of a virtual monopoly, the benefit derived from the Erie Canal's creating the business and making it possible, the interest to trade and commerce, the relation of the business to the property and welfare of the state and the practice of the legislature in analogous cases, collectively creating an exceptional case and justifying legislative regulation."

¹ *Cotting v. Goddard*, 183 U.S. 79, 22 Sup. Ct. 30. When a man voluntarily undertakes a public service which the State might perform, "*He expresses his willingness to do the work of the State aware that the State in the discharge of its public duties is not guided solely by a question of profit. It may rightfully determine that the particular service is of such importance to the public that it may be conducted at a pecuniary loss, having in view a larger general interest. At any rate, it does not perform its services with the single idea of profit. Its thought is the general public welfare. If, in such a case, an individual is willing to undertake the work of the State, may it not be urged that he in a measure subjects himself to the same rules of action, and that if the body which expresses the judgment of the State believes that the particular service should be rendered without profit, he is not at liberty to complain?*" *Ibid.* 93.

corporations who have devoted their property *to a use in which the public has an interest, although not engaged in a work of a confessedly public character*, there has been no further ruling than that the State may prescribe and enforce reasonable charges. What shall be the test of reasonableness in those charges is absolutely undisclosed.

As to parties engaged in performing a public service while the power to regulate has been sustained, negatively, the Court has held that the legislature may not prescribe rates which if enforced would amount to a confiscation of property. . . .

In reference to this latter class of cases [property devoted to a use affected with a public interest], which is alone the subject of present inquiry, it must be noticed that the individual is not doing the work of the State. He is not using his property in the discharge of a purely public service. He acquires from the State none of its governmental powers. His business in all matters of purchase and sale is subject to the ordinary conditions of the market and the freedom of contract . . . while he cannot claim immunity from all State regulation he may rightfully say that such regulation shall not operate to deprive him of the ordinary privileges of others engaged in mercantile businesses.

Pursuing his thought, we add that the State's regulation of his charges is not to be measured by the aggregate of his profits, determined by the volume of business, but by the question whether any particular charge to an individual dealing with him is, considering the service rendered, an unreasonable exaction. In other words, if he has a thousand transactions a day, and his charges in each are but a reasonable compensation for the benefit received by the party dealing with him, such charges do not become unreasonable because, by reason of the multitude, the aggregate of his profits is large. The question is not how much he makes out of his volume of business, but whether in each particular transaction the charge is an unreasonable exaction for the services rendered.

The court definitely states the public nature of the business and points out the difference in control of a public and private undertaking. The specific immediate reason for control may be monopoly profit in both cases, but need not be in public-service cases. The governmental character of the service creates the distinction which submits the utility to the more rigid control. The public welfare can best be served by limiting individual rights in the one case, and en-

couraging individual action in the other by refraining from limiting personal rights. The public has an interest in profits in the one case, in rates and service only in the other. The one operator has undertaken to discharge a governmental function, the other to conduct a private business.

The only step which remains is to hold that a business admittedly private may "become affected with a public interest"; by change of circumstances which render it of such vital import to the community at large as to make it a public calling and subject it to the more rigid regulation. The German Alliance Insurance Case decided by the Supreme Court in 1913¹ definitely affirms the first

¹ German Alliance Insurance Co. v. Lewis, 233 U.S. 389, 58 L. ed. 1011, 42 L.R.A. (n.s.) 1000. The Court said: "The cases need no explanatory or fortifying comment. They demonstrate that a *business, by circumstances and its nature, may rise from private to be of public concern, and be subject, in consequence, to governmental regulation.* And they demonstrate . . . that the attempts made to place the right of public regulation in the cases in which it has been exerted, and of which we have given examples upon the ground of special privilege conferred by the public on those affected, cannot be supported. *The underlying principle is that business of certain kinds holds such a peculiar relation to the public interest that there is superinduced upon it the right of public regulation.* . . . It would be a bold thing to say that the principle is fixed, inelastic, in the precedents of the past, and cannot be applied though modern economic conditions may make necessary or beneficial its application. In other words, to say that government possessed at one time a greater power to recognize the public interest in a business and its regulation to promote the general welfare than government possesses to-day. . . .

"It would be very rudimentary to say that measures of government are determined by circumstances, by the presence or imminence of conditions, and of the legislative judgment of the means or the policy of removing or preventing them. The power to regulate interstate commerce existed for a century before the Interstate Commerce Act was passed, and the commission constituted by it was not given authority to fix rates until some years afterwards. Of the agencies which those measures were enacted to regulate at the time of the creation of the power, there was no prophecy or conception. Nor was regulation immediate upon their existence. It was exerted only when the size, number, and influence of those agencies had so increased and developed as to seem to make it imperative. Other illustrations readily occur which repel the intimation that the inactivity of a power, however prolonged, militates against its legality when it is exercised. . . ."

proposition, and by unavoidable inference establishes the second.

This decision considered with the *Cotting Case* establishes the fact that two distinct types of industry may be regulated under the police power. The first class includes public utilities whose service is such that the Government must guarantee it to the community. Such industries must serve all comers. The service they render is a public one which all may demand as their right. The public has a direct interest in the profit they make. The second class consists of those industries, which because of their power to alter existing conditions of production and distribution have a direct influence upon the public welfare, but which do not exercise a governmental function or render a service so essential to the public that the State must guarantee it. Such business, in the absence of statutory requirement, need not serve all consumers. It may be required to serve at reasonable rates when service is rendered, but the public has no interest in its profits and cannot legislate for the express purpose of limiting them.

XI. *Summary*

To summarize, the basis of regulation is found in the theory of private property. Government control is but the exercise of a necessary sovereign power to protect the public interest in private property. Such protection, though it limits the individual rights, is essential to the existence of private property itself.

The property which is devoted to a public use, however, is singled out for more rigid control than other private wealth. This discrimination is based upon the fact that the owner has sought to make private gain by rendering a governmental service. He has volunteered for an undertaking of such vital interest to the public that the Government, though it has waived the right to conduct the business itself, must see that the service is adequately rendered at a fair rate under reasonable conditions.

The property devoted to the governmental service remains private, but because of the peculiar use the public interest, present in all private property, is emphasized. The property is subjected to a real encumbrance which not only changes but decreases its value. So long as the encumbrance exists the bundle of property rights is diminished. The property has undergone an actual change. Fewer rights exist. The social side of the property becomes dominant because the use is more vital to society. The distinctive features of utility regulation are based upon the necessity of protecting this public interest.

CHAPTER II

THE PURPOSE OF REGULATION

I. *Regulation and Private Interest*

Regulation is necessarily antagonistic to the individual interests regulated. Government control limits private rights. It is negative and restrictive, not positive or constructive. The police power, under which regulation is exercised, is a restrictive power. The functions of government are qualified by the limitation that they must promote the public good with the least possible interference in private affairs. The *laissez-faire* economic and legal systems, still dominant in this country, have emphasized this restriction. Affirmative interference, even in the interest of the public, has been almost impossible. Such progress as has been made in protecting the social element in private property has been possible only by restrictive action.

Regulation, because it is restrictive, appears destructive. Its immediate result is destruction, though its ultimate aim and effect are positive and constructive. Regulation partially destroys property and property rights by limiting the bundle of rights which constitute property. It destroys individual freedom by limiting the use of property and restraining personal action. It destroys value by destroying property rights, encumbering property, and limiting profits. Whenever the individual interest and the public interest conflict, to such an extent that regulation becomes necessary, the individual interest is destroyed in whole or in part as expediency dictates.

The aim of regulation is the destruction of certain individual rights. This fact cannot be too emphatically pointed out. Failure to recognize it has produced much of the confusion in discussions of regulation and valuation. It has

produced a widespread misconception of the "due-process" limitation of the Fourteenth Amendment by portraying it as prohibiting all destruction of value without compensation. It has obscured both the aim and basis of regulation.

The basis of utility control is the public interest in the business, i.e., the necessity that the common good be protected through the police power by enforcing adequate, continuous, non-discriminatory service at reasonable rates. The aims of regulation, though negative and destructive, must be similarly stated in terms of the public welfare.

II. *Service Requirements*

The chief objective of regulation must be adequate service. Public-service corporations are the physical basis and instrumentality of all political, social, and economic organization, and underlie every governmental, industrial, and social institution. Their existence in a permanent, adequate, well-organized form is essential to the fulfillment of the purposes of government. They are its military, political, and economic tools.

Adequate service can be secured only when regulatory measures are passed with this particular aim in view. If the community is firmly committed to private ownership, it must enact laws which will supply the incentive necessary to induce capital to enter the field in amounts sufficient properly to develop the service. Rate and financial legislation must be adjusted to that end, or the aim accomplished by subsidies. Poor service and inadequate development will follow unless such a policy is adopted, or unless the business is taken over by the public.

The regulatory system adopted must be framed to secure continuous as well as adequate service. Rates must provide for accruing depreciation. Financial regulations and returns must be adjusted to attract capital for necessary additions and betterments.

III. *Rate Regulation*

Regulation cannot pause when adequate and continuous service are secured. All forms of discrimination and rebating must be prohibited and rate schedules made upon a scientific basis fair to all consumers.

The rates fixed must be low enough to encourage general use of the service, or all other features of regulation will be nullified. This phase of regulation is all-important. It is only through general use that the utility service can build up the community and promote the public welfare. It is in part because private interests may be better served by rendering a more expensive service to few consumers than by a cheaper service offered many that regulation is necessary. The aim of government control must be to extend the service as far as it may reasonably be developed under the particular circumstances. This aim makes rate regulation more than a mere artificial enforcement of restraints equivalent to those of competition.

IV. *The Social Side of Regulation*

Important as low rates are, however, the charges must be fair to the utility if successful private operation is expected. The disputed question in rate regulation is, Shall the schedule be drafted primarily to protect private property rights or to promote the public welfare? It is because this question underlies the whole problem of utility control that such space has been devoted to discussion of the purpose, dual nature, and legal status of private property devoted to a public use.

The interests of the utility and public are widely conceived of as necessarily antagonistic. The short-sighted rush for gain by both has made their interests actually antagonistic in the past. A successful regulatory system, based upon private operation, must recognize that the utility and public have many interests in common. Where those interests conflict, public rights must predominate,

since the whole purpose of regulation is to serve the common good. Where private property interests are really adverse to the public welfare, they must be destroyed because private property itself exists only to promote the public good and private interests can be furthered only by promotion of the common weal. The moment the individualistic side of private property is emphasized at the expense of the social side, the fundamental property rights themselves are threatened. If the question is vital the social interest must predominate.

The social-welfare element, therefore, is constantly becoming more prominent in regulation. No well-balanced regulatory system can neglect it. Commutation fares must be offered to counteract the congestion of population in thickly settled city districts. Reduced transportation rates should be secured for school-children. Transportation, gas, and electric charges should be reduced to encourage general use of the service, develop the community, foster industry, and raise the general standard of living. Transportation rate schedules and classifications must be drafted to encourage the movement of low-class freight and raw material to aid production, and to encourage immigration to assist in the distribution of population. The primary object of regulation is the economic betterment of society.

The purpose of regulation is apparent. The expedient means are determined with greater difficulty, especially when the property employed in the public service is private. The system of private operation is essentially a limitation upon the pure public-welfare theory. It is far from inconceivable that the public interest may demand operation at an unremunerative rate, even after the development period of the service has passed. It might be deemed a wise legislative policy to supply cheap transportation, light, heat, power, or water to raise the standard of living, develop the community, build up an industrial center, attract population, and lower the price of manufactured goods. Such

legislation accords with present theories of social betterment, has been widely experimented with on the Continent, and is not unknown in this country. But private ownership is poorly adapted to such a programme because an adequate return upon the capital invested is the first essential of such a system. Social and economic betterment rates not remunerative to the utility owners can be secured only by way of subsidizing the plant; and subsidies are not looked upon with favor, have not proved satisfactory, and are necessarily indirect and open to misuse. Public ownership, though not always expedient, is the only logical solution of the social betterment problem.

V. Northern Pacific Railway v. North Dakota

The adoption of private ownership of utility property in the United States has not, however, completely closed the door to social-welfare regulation. The decision which limits public and entrenches private interest most is *Northern Pacific Railway v. North Dakota*,¹ reversing *Minnesota and St. Louis Railroad v. Minnesota*.² In the *Dakota Case* the

¹ 236 U.S. 585, 59 L. ed. 735.

² 186 U.S. 257, 46 L. ed. 1151, 22 Sup. Ct. 901. The Court said: "But, while local interests may serve as a motive for enforcing reasonable rates, it would be a very different matter to say that the State may compel a carrier to maintain a rate upon a particular commodity that is less than reasonable or — as it might equally well be asserted — gratuitously, in order to build up a local enterprise. . . . The fact that the property is devoted to a public use on certain terms does not justify the requirement that it shall be devoted to other public purposes. . . . The public interest cannot be invoked as justification for demands which pass the limits of reasonable protection and seek to impose upon the carrier and its property burdens that are not incident to its engagement.

"Where it is established that a commodity, or class of traffic, has been segregated and a rate imposed which would compel the carrier to transport it for less than the proper cost of transportation, or virtually at cost, and thus the carrier would be denied a reasonable reward for its service after taking into account the entire traffic to which the rate applies, it must be concluded that the State has exceeded its authority.

"If in such a case there exists any practice, or what may be taken to be (broadly speaking) a standard of rates with respect to that traffic, in the light of which it is insisted that the rate should still be regarded as reasonable, that

Court ruled that it is not sufficient protection to private rights to grant an adequate return upon the whole schedule, but that each rate must provide a reasonable return for the service rendered.

Even this ruling, however, leaves opportunity for limited social-betterment rate-making. The Court merely holds that the rate must produce some return above the fair cost of the service — an income reasonable for the kind of traffic carried. The decision leaves room to draft rates to encourage the movement of low-class freight, since a rate for such traffic might be held reasonable, though far below a figure justifiable for other goods.

Much may be accomplished by adjusting the rate of return.¹ Social-welfare principles may be applied to fix the percentage in each case.

A recent decision² holds that an order compelling a traction company to carry passengers at a loss over lines operated under a separate franchise, but as a part of a general system, was not a violation of the due-process clause if a reasonable income was earned upon the whole system. A similar rule was laid down in the case of *St. Louis, etc., Railroad Company v. Gill*.³

An analogous rule has been adopted in the case of service *should be made to appear*." This case has been approved by a long line of subsequent holdings, largely, however, commission cases. See *Norfolk and Western Ry. v. Conley*, 236 U.S. 605, 59 L. ed. 745; *Union Pacific R.R. Co. v. Public Utilities Comm. of Kansas*, P.U.R. 1915-D-377; *In re N.E. Kansas Tel. Co.*, P.U.R. 1916-B-925; *Butler v. Lewiston, A. & W. St. Ry. Co. (Me.)* P.U.R. 1916-D-25.

¹ In commenting on *Northern Pacific Ry. Co. v. North Dakota* the Court said, in *Norfolk and Western Ry. v. Conley*, 236 U.S. 605, 59 L. ed. 735: "It was recognized that the State has a broad field for the exercise of its discretion in prescribing reasonable rates for common carriers within its jurisdiction; that it is not necessary that there should be uniform rates or the same percentage of profit on every sort of business; and that there is abundant room for reasonable classification and the adaptation of rates to various groups of service."

² *Puget Sound Trac. L. & P. Co. v. Reynolds et al.*, 244 U.S. 574, 579, 61 L. ed. 1325.

³ 156 U.S. 649, 15 Sup. Ct. 484, 39 L. ed. 567.

orders. The Court has sustained rulings requiring utilities to install additional facilities and render more adequate service even at a loss, where the company was expressly or impliedly obligated by its franchise privileges to meet such requirements.¹

Thus, while the operation of the social-welfare principle in rate-making is very much restricted, it is not wholly blocked by private ownership. It may be successfully applied, within the limits stated, to railway rates in general,² without violating the prohibitions of the Fourteenth Amendment. It may be applied with even wider results to other utility rates. It must, under the changing economic and social theories, become ever more and more a feature of control if government ownership and operation are to be avoided.

VI. *Anti-Monopoly Regulation*

Encouragement of extensive use of service by fixing reasonable charges is of great import, but cheap rates are not the chief aim of regulation. Nearly every decision has in-

¹ *Atlantic Coast Line v. N. Carolina Corp. Comm.*, 206 U.S. 1, 51 L. ed. 933; see also *Wisconsin Ry. Co. v. Jackson*, 179 U.S. 287, 45 L. ed. 194, 21 Sup. Ct. 115; *Louisville & Nashville R.R. v. Kentucky*, 183 U.S. 503, 22 Sup. Ct. 95.

² "Undoubtedly the cost of service represents the most important and in many ways the fairest basis for fixing rates, but this basis cannot in all cases be inflexibly applied, owing to the economic necessity for moving certain traffic which could not be handled at all except at a relatively low rate." *Railroad Passenger Rate Case* (Mass.) P.U.R. 1915-B-362, 367.

"The general comparatively low rating [of low-class commodities] is largely due to the character of such commodities, the use to which they are put, the demand for them in large quantities throughout the country, their susceptibility of movement at less cost and risk to the carrier than high-class and more valuable freight, and other like considerations. *It is to the interest of the carrier as well as the public that their rates be low enough, if not below a remunerative point, to permit the general movement and distribution of these commodities in general demand in large quantities for construction, building, manufacturing, and other purposes. Reasonable freedom of such movement and distribution stimulates the growth and development of the country and thereby promotes all interests.*" *Colorado Fuel & I. Co. v. Southern Pac. Ry. Co.*, 6 I.C.C. 489.

volved and emphasized the rate question, because, under the *laissez-faire* policy, prices in the monopolistic utility field were invariably above the reasonable figure.

The agitation which resulted in the Granger movement was one to reduce charges. The low competitive rates forced from interstate utilities by the industrial centers made the higher non-competitive rates charged the Illinois and Iowa farmers seem unreasonably high. The fall in prices on the farmers' products coming just at this time emphasized this phase of the dissatisfaction. Rebates and individual discrimination were overlooked. A remedy for the rate situation was sought in maximum-rate legislation.

The movement was not a complete reaction against the *laissez-faire* policy. The aim was to regulate monopoly and curb unreasonable profits. As the movement gained momentum it broadened to include a cure for rebates, unjust discrimination between persons and localities, and the many other evils of monopoly.

The period was anti-monopolistic. Competition was considered a sufficient force, if properly fostered, to regulate monopoly profits, confine corporate growth within the bounds of safety, and generally protect the public. The aim of regulation was to curb monopoly, to foster competition, and to eliminate monopoly profits. The regulation suggested was very similar to that since applied to the whole field of general industry, but declared inexpedient in the case of public-service companies.

VII. *The Recognition of Regulated Monopoly*

Since 1910 there has occurred a complete change in the aims of public-utility regulation. The competitive theory has been practically abandoned. The present movement recognizes monopoly, particularly natural and legal monopoly, as a desirable element in the field and seeks to regulate rather than destroy it. The day of regulation by competition in the field of public service has passed. Monopoly has

come to stay. Regulation has replaced competition, but not as a mere artificial competition installed because of the absence of, or undesirability of, the real element.

The force of competition as a regulatory element in rate control rests on the fact that when competition in any form is present, the rate will ultimately be forced, not to the mean figure which will yield the greatest return, but below that figure to approximately the cost of rendering the service by the most disadvantageously located competitor. This is true because if a higher rate is charged, the marginal producer who is struggling for existence will sell lower and supply the demand, and new capital will be drawn into the industry, thus forcing the price down. The normal price under free competitive production and the only price which can be stable in case of such production is one which approximates the cost of production.

The competitive rate, therefore, is always below the unregulated monopolistic rate under the same productive conditions. Moreover, the competitive theory fitted well to the ragged ends of the previous *laissez-faire* policy. It complied with the demands of those who held exalted ideas of the sacredness of private property and business rights. It required no effort. It was conservative regulation; and it was adopted. It was held on to tenaciously because it was conservative, because it did conform to ideas of industrial freedom, and because where competition existed it did lower rates.

During the earlier period of regulation no effective check was placed upon monopoly. None was known, and monopoly was feared because it could not be controlled. The period of the usefulness of uncontrolled monopoly passed, but careful fostering during that period had developed legal entities of seeming gigantic proportions, which rode over both competition and legislation. Regulatory bodies saw no loophole toward successful control save abolishing absolutely and forever the object they deemed themselves incapable of controlling. Competition stood forth a shining

relic of past glory, an idea to be sought above all else. The struggle to reinstate this fallen idol brought self-assurance, brought legislative experience, and has led to the present altered aim.

VIII. *The Reasons for the Change*

The reasons for the change from the competitive theory to the recognition of regulated monopoly in the utility field are not difficult to discover. Where virtual monopoly exists, the competitive force fixing price near the cost of production is lacking. If rates are limited the restriction must be imposed by government regulation. The public-utility company is monopolistic because duplication of facilities and the uncertainty of competitive service are not conducive to the greatest possible public benefits. Often the utility combines both natural and legal monopoly. In fact, the two differ in little but name in the public service field, since natural monopoly seldom means real inability to duplicate facilities or offer substitute service; in truth means little but the inexpediency of granting more than one permit to use natural facilities. The territory served cannot afford an unnecessary duplication of rights of way, of wires, conduits, pipes, and rails, particularly where such facilities are located in, above, or below its streets. A legal monopoly is granted. The securing of a duplicate right of way becomes, in most cases, practically impossible, and so expensive as to produce virtual monopoly for the first company in the field. Duplication always multiplies the capital expenditure upon which a return must be provided by the rates. And at the same time it decreases the number of consumers who must pay the charges, thus raising the *pro-rata* share of each.

The service which a public utility renders is usually not in competition with any substitute service, and competition between similar utilities is undesirable. Competition could not be accepted as a permanent regulatory force be-

cause the corporations to be controlled were best operated as monopolies. The competitive theory has had no real place in regulation since the advantages of monopolistic operation became apparent.

It is questionable whether, under modern industrial conditions, the competitive theory of regulation could be successfully applied even in the absence of natural and legal monopoly. Competition keeps rates near the cost of production, but also keeps that cost needlessly high. This is particularly true in the case of distributive services such as water, gas, electricity, telegraph, telephone, and common carriage. A great part of the cost of service in such undertakings is connected with the stringing of wires, laying of mains, or construction of roadbed and track. Any duplication of this non-productive distribution system is a burden upon the community which nearly if not completely eliminates the possibility of lowering rates by way of competition. The cost of production would raise the competitive rate above the monopolistic charge of a favorably located single company. The funds wasted in needless and unproductive duplication could be used by a single concern to extend its mains or wires into areas which could not be reached at all if two companies occupied the field.

Competition is a defective regulatory force, under present conditions, because it does not foster the public interest in the undertaking and does not take social welfare into consideration. Although recognizing a difference between the public utility and other industry which justifies regulation of a different type, the competitive theory proceeds to disregard that difference and apply the same control to utilities and other industry.

Competition for these reasons has proven a regulatory force unsatisfactory to both the utility and the public. Monopoly has been accepted as the economic substitute to eliminate the wastes of competition, but accepted subject to regulation to secure the benefits which competition

would have given and to guarantee to the public its share of the savings from monopolistic operation.

The changed attitude of regulatory bodies toward monopoly is clearly expressed by the Public Utilities Commission of Illinois in the case of the Lake Shore and Michigan Southern Railway Company,¹ wherein the Commission said:

The consolidation will, of course, result in the formation of a corporation of great magnitude with immense power which might, in the absence of reasonable governmental supervision and control over its dealings with the public, exercise evil influences on government, or become oppressive to the public; but the dangers because of bigness which might be apprehended if unbridled freedom were to follow, cannot be regarded as a menace when the greater power of the Government to regulate and control it is properly exerted to prevent wrong and injustice.

This Commission is not opposed to unification, merger, or consolidation of public-service corporations in Illinois when the same can be effected without violating some positive law. The constitutional and statutory inhibitions against monopolies were designed to preserve to the public such benefits as would accrue from competition. Under the Public-Utilities Law of Illinois, however, ample provision is made to safeguard more fully the interests of the public through and by a commission organized to supervise, regulate, and control all public-service corporations in the matter of reasonableness of rates to be charged, the adequacy of the service

¹ I.P.U.C. No. 2495; see also State Pub. Utilities Comm. ex rel. Clow v. Romberg (Ill. Sup. Ct.) P.U.R. 1917-B-355; State Public Utilities Comm. ex rel. Pike County Tel. Co. v. Noble, 275 Ill. 121, P.U.R. 1917-A-520. The State regulatory commissions are unanimous in their acceptance of regulated monopoly.

"The enactment clearly constitutes an expression of the legislative policy which, recognizing the evils which flow from duplication of the equipment and facilities of public utilities, declares that regulated monopoly is preferable to unrestricted competition in which the possibilities for waste and dissatisfaction are limited only by the resources of the rivals and the patience of the consumers. *The clear intent of the statute, as has been said in numerous decisions, is to prevent competition* in any given field so long as the existing facilities are adequate or can be made so by the exercise of the supervisory and corrective jurisdiction of this commission," *Theresa Union Tel. Co. v. East Valley Tel. Co.* (Wis.) P.U.R. 1917-E-387, 394; *Ft. Supply T. & T. Co. v. Pioneer T. & T. Co.* P.U.R. 1917-A-188, 191.

to be rendered, and in the prevention of discrimination as to both rates and service.

Formerly without reasonable regulation and control of public-service corporations competition seemed to be the only method by which the public interests could be protected, but *with such comprehensive regulatory laws as are now in force in this state competition loses its forces as a corrective agency.*

Monopoly having been accepted in the field of public-utility service, the aim of future government regulation must include the weeding-out of those natural evils which have characterized monopoly in the past. Rates must be controlled to keep them near the cost of production. Operating expenses must be supervised to keep the cost of production low, and the accounting and financial activities of the companies must be regulated to prevent circumvention of regulation.

It is not the evils of monopoly alone, however, which must be guarded against under a system of regulated monopoly. Competition must be eliminated to prevent needless duplication and waste. The regulatory force of competition must be saved, advantage taken of the economic benefits of monopoly, and the public interest substituted for that of the individual competitor.

IX. *Speculation*

The most prominent phase of regulation outside the sphere of monopoly is the control of speculation. In this field, as in that of monopoly, the dangers were learned early. The great development company bubbles and lotteries taught the lesson. Here, too, early conditions were unfavorable to regulation. Utility undertakings had to be given the glamour of speculation to attract private capital and encourage rush construction. Speculation in the public-utility field was more pronounced than elsewhere. It had run its course in other industries when the public-service field was opened. There had been wild-cat banking, land booms, and industrial bubbles. In these fields the specula-

tor was forced to play a game the people knew, but the public-utility business was new. The changes affected by its development were as revolutionary as the business itself. The appeal of unlimited profits could be made.

The utility field was unoccupied. It offered temptations to the speculator which no sphere already developed could hold out. The public demanded the service. There was a vast territory which required the utility for its development. The eagerness of the people made them the easy prey of the promoter. Land grants, bond issues, and subsidies were secured without difficulty. And the development of new territory opened the door to unlimited wealth, by way of collateral investment, to the man on the spot and on the inside of the development organization.

No one of all these forces which drew speculators from other fields, however, was inherent in the nature of the public-utility business. The utility differs from other industry, so far as speculation is concerned, only in the harm which flows from inefficient control on account of the public nature of the business. Effective regulation in the public interest would be impossible if the law permitted the utility to be made the pawn in a speculative game. Rate control, based upon true economic principles, does much to eliminate the speculative element, but valuation not based on such principles reopens the door to the speculator and endangers the interests of stockholders, bondholders, and consumers.

Adequate, uninterrupted service can scarcely be expected, even under compulsion, when the undertaking is a speculation rather than a sound business proposition. The public interest and that of the gambler in utility securities and utility service are wholly dissimilar. Regulation can be made effective only by eliminating speculation and uncertainty and placing the service on an economic basis. Competition, even in a non-monopolistic field, cannot check speculation, for competition is itself speculative and un-

certain. The competitor entering a field already occupied plays a spectacular game of chance staking his self-confidence, an invention or a newer process against the training and going value of the existing concern.

X. *Efficient Management*

Rate schedules and financial legislation formed to produce a return that will attract capital, and at the same time keep the price of service near the cost of producing it, would prove ineffectual if that cost were permitted to be unduly enhanced either by unnecessary capital expenditures or unreasonable operating expenses. Any effective regulatory system must enforce efficient management. And efficient management can be insured only by means of a thorough, compulsory cost system. It is impossible to regulate scientifically on any other basis. Rate regulation must be founded on cost. Depreciation must be accurately estimated and provided for, and working capital held in proper ratio to investment and service. Cost must be itemized to show proper operation as a basis for credit, and point out possible savings in material and labor.

Regulation must attempt to produce a capitalization reasonable in relation to the service performed and the circumstances under which it is rendered. It must aim to keep operating expenses at a reasonable figure considering those same elements. False capitalization, stock-watering, and sharp financial practices must be eliminated.

Regulation must be shaped to counteract what Professor Clark has spoken of as the failure of monopoly to make a "proper use of that invaluable agent of progress, the junk heap."¹ This aim may be accomplished by providing a compulsory depreciation fund unavailable for general use to offset the temptation to keep worn-out or antiquated equipment in service. Such requirements should be supplemented by positive rules as to new equipment, construction,

¹ Clark, *The Control of Trusts*, 2d ed. p. 14.

and standards of service, and by manipulation of the rate of return to reward economic management.

Control must be exercised to prevent unnecessary salary expenditure, unreasonable interference by holding companies, irrational investments in material and supplies, idle property, excessive and poorly adapted or antiquated equipment; to curb loss by leakage; to secure efficient organization and business methods; to limit the size of the corporation and the territory covered, etc. Regulation should not amount to management, but it cannot permit management to defeat regulation.

XI. *Financial Regulation*

Any system of regulation which neglected the financial transactions of the utilities would be powerless to check speculation. Such a state of things would hopelessly handicap rate-making. It would render attempts to force efficient management futile.

Security issues must be permitted only upon a showing of actual need for further capitalization, proof of the expediency of the type of financing proposed, and the proper ratio of stock to bonds, etc. The terms of sale must be fixed to assure an adequate return, and the sale expenses amortized from income to prevent a padded capital account. Where the aim is to secure funds for additions and betterments the propriety of the form and extent of equipment or construction must be determined.

In the case of purchase and sale the capitalization of the purchasing company must be limited to the fair value of the property, irrespective of the sale price, and the price must be held to approximately the fair value, to prevent handicapping the company by an excessive expenditure on which a return cannot be earned. Where a part of the utility's property is sold a corresponding decrease in capitalization must be enforced or the resulting deficiency made good by additions and betterments not charged to capital.

'In the case of a reorganization the capitalization must be limited to the fair value of the property, and where consolidation occurs capital must be restricted to the sum of the outstanding securities of the consolidated companies plus any additional capital actually invested at the time of consolidation.¹

XII. *Accounting*

The accounting features are among the most important of the regulatory programme. Proper accounting methods and investigations are the basis of publicity, of financial regulation, of rate valuation, of every feature of control. A uniform system of public-utility accounts is absolutely necessary to show the service records, earnings, expenses, and real investment. It alone can make possible reliable comparison between utilities to show where economies may be effected or to test reasonableness of charges. It only can serve as the basis of the cost system upon which all regulation is founded.

In the case of issues of securities the accounting system must show the existing capitalization, the need for further securities, the ratio of stock to bonds, and the expedient form of security. It must follow the expenditure of the proceeds from the sale. It must enable regulation to protect both the investor and the consumer.

In the case of rate investigations the accuracy of the original-cost inventory depends upon the accounts required by the regulatory system. The estimate of operating expenses and working capital and the traffic survey are dependent upon the accuracy of the accounts. The trustworthiness of the inventory is affected by that of the accounts. Every phase of rate control based on cost of service is dependent upon accurate accounting.

¹ It is questionable whether it would not even be better to restrict capitalization to actual value in the case of consolidations too, though many of the Utilities Acts do not do so.

XIII. *Summary*

The full realization of the widest aims of utility regulation, including the socialization of the service and the establishment of cheap rates to develop the territory and raise the standard of living, is impossible under private ownership. The purpose of a regulatory programme based on private operation is primarily the protection of the public from the private interests entrusted with the conduct of the service. The aim is to secure adequate, continuous, non-discriminatory service at rates which will attract sufficient capital and yet keep the price of service near the cost. The public interest is supreme. Private-property rights are involved only incidentally, and only in so far as it is necessary to respect them to secure the necessary capital and keep within the prohibitory clauses of the Federal Constitution.

The many phases of government control constitute one unified regulatory programme, every part of which is dependent upon the successful operation of every other part. Valuation is but one feature of public-utility regulation. Both its form and aims are relative to the part of the general programme, which it is called upon to carry out. Its consideration apart from the other features of that programme would be unintelligible.

CHAPTER III

VALUATION AND REGULATION

I. *Valuation a Judicial Theory*

The place of valuation in public-utility regulatory programmes is essentially a legal question. Valuation theories have been created wholly by judicial decision. Economic forces have but recently been permitted to influence valuation principles. The present doctrine of the Federal Supreme Court as to "fair value" is an artificial structure of piecemeal construction, forming, not a unified whole based upon economic principles, but a conglomerate mass shaped by the varying issues presented in a number of separate cases. The growth has been gradual. It has been almost haphazard. The court decisions have not been wholly consistent. Even the individual holdings of the several members of the Supreme Bench have lacked unity. No definitely stated or clearly analyzed theory has been developed. Before attempting to collect the fundamental principles of valuation and analyze them, it is necessary, therefore, to follow the development of the theory through the long line of decisions which contain, but can scarcely be said to state, the law.

II. *The Granger Cases*

In the *Munn Case*¹ the Court held without qualification that the State legislative power may regulate rates where the public has an interest in the business. The issue was the constitutionality of a maximum-rate law. The State's authority was unhesitatingly upheld. Rate-making was looked

¹ 94 U.S. 113, 24 L. ed. 72. See also *Sinking-Fund Cases*, 99 U.S. 700, 25 L. ed. 496; *Spring Valley Waterworks v. Schottler*, 110 U.S. 347, 4 Sup. Ct. 48, 24 L. ed. 173.

upon as a legitimate safeguard for the public welfare. Rate regulation was regarded as a justifiable condition or limitation upon the use of private property voluntarily devoted to a public use for private gain. The claim of property rights under the Fourteenth Amendment, which has since become the basis of judicial review and a limitation upon the State police power, was forcibly advanced by the utilities, and received consideration. The Court without faltering, however, denied the claim with unmistakable emphasis, saying:

It is insisted, however, that the owner of property is entitled to a reasonable compensation for its use, even though it be clothed with a public interest, and that what is reasonable is a judicial and not a legislative question.

As has already been shown, the practice has been otherwise. In countries where the common law prevails it has been customary from time immemorial for the legislature to declare what shall be a reasonable compensation under such circumstances. . . .

Rights of property which have been created by the common law cannot be taken away without due process; but the law itself, as a rule of conduct, may be changed at the will, or even at the whim of the legislature, unless prevented by constitutional limitation. . . .

We know that this is a power which may be abused, but that is no argument against its existence. *For protection against abuses by the legislature the people must resort to the polls, not the courts.*¹

The dissenting opinion turned squarely upon the question of property rights and gave to the Fourteenth Amendment the interpretation that has since been adopted to protect private interest at the expense of public control. The majority opinion was clear-cut and met the question squarely. The Court encountered the exercise of a recognized legislative power in a recognized field for a purpose sanctioned by the common law. The rule, so often reaf-

¹ "Where property has been clothed with a public interest, the legislature may fix a limit to that which shall in law be reasonable for its use. *This limit binds the courts, as well as the people. If it has been improperly fixed, the legislature, not the courts, must be appealed to for the change.*" *Peik v. Chicago & Nw. Ry. Co.*, 94 U.S. 178.

firmed since the *Munn Case*, that the Court will not inquire into the expediency of the exercise of a legislative power seemed controlling. The Court said:

Of the propriety of legislative interference within the scope of legislative power, the legislature is the exclusive judge.

This repudiation of the theory of judicial review prevented consideration of the alleged limitation upon the State's police power.

The extent of the rate-making power arose again as an issue in the case of the *Chicago, Burlington and Quincy Railroad Company v. Iowa*.¹ In petitioning for an injunction to restrain the enforcement of the State maximum-rate law the attorneys for the railroad contended that the act violated the due-process clause of the Fourteenth Amendment, advancing the argument that has since become the controlling one in valuation cases. The argument was rejected by implication.²

The Court applied the strict theory of regulative control stated in the *Munn Case*. The issue was construed as the protection of the public right to service at reasonable charges from the rate-making attacks of a company fully able to take care of itself. The plea of that company for constitutional protection of its right to profit from the property employed in the public service was subordinated to the plea of the public for protection of its rights as defined by the State legislative power.

The same question of property rights was advanced in the case of *Tilley v. S. F. and W. Railway Company*³ and

¹ 94 U.S. 155.

² The Court said: "It was within the power of the company to call upon the legislature to fix permanently this limit, and make it a part of the charter; and if it was refused, to abstain from building the road and establishing the contemplated business. If that had been done, the charter might have presented a contract against future legislative interference. But it was not, and the company invested its capital, relying upon the good faith of the people and the wisdom and impartiality of legislators for protection against wrong under the form of legislative regulation."

³ 5 Fed. 641.

valuation was suggested as the test in applying the alleged constitutional limitation, but the Court declined to consider it, saying:

The question whether the rates prescribed by the legislature either directly or indirectly, are just and reasonable, is a question which the legislature may determine for itself.

So long as the Court rejected the principle of judicial review it was powerless to consider the question of reasonableness. Valuation and the other tests of rate-making could receive no consideration in the decisions.

III. *The Commission Cases*

The question came up again nearly a decade after the decision in the Munn Case, in the Railroad Commission Cases,¹ being dragged in by the Court by way of dictum in cases brought to restrain the Missouri Railroad Commission from fixing rates on the ground that the companies' charters constituted contracts exempting them from State rate control. The Court said:

From what has thus been said, it is not to be inferred that this power of limitation or regulation is itself without limit. This power to regulate is not a power to destroy and limitation is not the equivalent of confiscation. Under pretense of regulating fares and freight, the State cannot require a railroad corporation to carry persons or property without reward; neither can it do that which in law amounts to taking of private property for public use without just compensation, or without due process of law. What would have this effect we need not now say because no tariff has yet been fixed.

Admittedly the question was not in issue, and the dictum was not followed out in the decision.

The Court did not attack the regulatory power of the State, but suggested for the first time a limitation on that power. No intimation was given of the nature of the suggested limitation, and no authority cited to prove its exist-

¹ *Stone v. Farmers' Loan & Trust Co.*, 116 U.S. 307, 6 Sup. Ct. 334.

ence. The authority to regulate rates within the limits set was expressly upheld.

The question of valuation was brought directly to the Court's attention by the statute in question, which directed a revision of tariffs to permit a "fair and just return on the value of such road, its appurtenances and equipment," but the opinion did not consider the question. The dissenting opinions of Justices Field and Harlan, however, took up the subject and clearly repudiated valuation as a limitation upon rate-making.

The case, in view of the strongly worded decisions in the Granger Cases, can only be explained by the fact that just at this time a sweeping change was taking place in the views of the Supreme Court. The Court, because it is required to apply a legal system developed during the *laissez-faire* period which unduly emphasizes individualistic theories and the protection of individual rights, has not been inclined to respond to the reaction from the *laissez-faire* doctrine. The growth of the legal concept which emphasizes the social duties and responsibilities attaching to the individual and to private property has been slow. The Granger Cases marked the awakening to the change. They met with strong dissent. A change in the makeup of the Court strengthened the minority. An opportunity to limit the regulatory movement and establish the doctrine of judicial review was soon presented. The Fourteenth Amendment, passed as a political war measure to conserve the fruits of victory by protecting negro rights in the South, was conceived of as applicable to the new and wholly unrelated subject of corporate rights. The due-process clause of that amendment was judicially amended to make it coextensive with the limitation imposed upon the Federal Government by the Fifth Amendment. Influenced by the new idea, the Court threw in the dictum of the Commission Cases, that the legislative power of regulation is subject to judicial limitation, and hastened on to declare a corporation

a person within the meaning of the amendment. The opening thus offered for Federal judicial smothering of State regulatory activity was instantly taken advantage of by corporations crowding to seek safety from the excessive rate legislation brought on by early corporate evils. Under this pressure the Court, in direct reversal of the Granger Cases, extended the meaning of "due process" to include "taking property without just compensation," and extended its review jurisdiction to include the State police power.

The majority opinion in the Commission Cases suggests for the first time that legislative rate control is limited by the confiscation clause. "Due process" receives a new construction based upon taking private property without compensation. The language of the decision is therefore deserving of note. The underlying thought is that the State cannot require a railroad corporation to carry persons or property without reward. The reasoning is unquestionably sound. But in groping for a basis for the rule the Court seems to have been led astray by the subtle suggestion of counsel for the road, and the opinion continues, "neither can it do that which in law amounts to taking of private property for a public use without just compensation, or due process of law." This too is a correct statement of an abstract legal proposition, but the Court offers no valid excuse for coupling it with aught that has preceded either by way of premise or conclusion. There is no attempt to show that rate-making can or does enter the field of confiscation. The Court, after volunteering the information, therefore abandons the point with the statement that the question was not before it anyway.

The opinion plunges the Court into the midst of a new phase of the old Jeffersonian dispute as to the right of the Court to declare a State law unconstitutional, started by the decision in *Marbury v. Madison*.¹ A decision upholding

¹ 1 Cranch, 137, 2 L. ed. 60.

the Court's power was inevitable. The logical, economic, and legal soundness of the decision, where the purpose of private property and the aims of regulation are considered, is not so apparent. The exercise of the police power partakes of the nature of a legislative declaration of what the rights of private property within the State shall be. It defines private property. The function is purely legislative. It is one inherent in the State. The basis of the authority of the Federal judiciary to interfere remains to be clearly pointed out. It certainly was not definitely stated in the Fourteenth Amendment. It has not been established to the satisfaction of the average mind by the question-begging reference to the law of the land.

IV. *Dow v. Beidelman*

In *Dow v. Beidelman*¹ the railroads again raised the question of the constitutional limitation upon the rate-making power of the State, in a suit to test the validity of an Arkansas statute reducing passenger fares. The Court quoted the dictum of the Commission Cases without comment, but went on to add:

The plaintiffs in error . . . argue . . . that with the same traffic that their road has now, and charging for transportation at the rate of three cents per mile, the net yearly income will pay less than 1½ per cent on the original cost of the road, and only a little more than 2 per cent on the amount of its bonded debt. But there is no evidence whatever as to how much money the bonds cost, or as to the amount of the capital stock of the corporation as reorganized, or as to the sum paid for the road by that corporation or its trustees. It certainly cannot be presumed that the price paid at the sale under the decree of foreclosure equaled the original cost of the road, or the amount of outstanding bonded debt. Without any proof of the sum invested by the reorganized corporation or its trustees, *the Court has no means, if it would under any circumstances have the power, of determining that the rate of three cents a mile, fixed by the legislature is unreasonable.* Still less does it appear that there has been any such confiscation as amounts to a taking of property without due process of law.

¹ 125 U.S. 680, 8 Sup. Ct. 1028.

The attempt is made for the first time to indicate the nature of the limitation on the State's rate-making power.

The value of the property is recognized as a feasible basis for rate-making. The test of value suggested is the sum actually invested. Capitalization and the value of outstanding securities are rejected as a basis for valuation. But the Court is still doubtful of its power to apply the test. The dictum of the Commission Cases is not fully accepted. The Court is unwilling to take a step which would in effect change rate-making from a legislative to a judicial function. The purpose of private property and the aims of regulation have re-occurred to the judicial mind. The question of public interest is still paramount, that of private property subordinate.

The issue arose next a few months later in the case of the Georgia Railroad and Banking Company *v.* Smith,¹ in which the roads again advanced the claim for exemption based on a charter contract. The Court accepted and restated the doctrine of the Commission Cases dictum without analysis — quoting as its authority that case and *Dow v. Beidelman*.

But here as in the Commission Cases the statement was but dictum, as the only issue really before the Court was the claim for exemption from all regulation by reason of the alleged charter contract.

The Court shows the confusion and uncertainty under which it labored by adding the apparently inconsistent but judicially sound statement that:

When such use [public] exists the business becomes subject to legislative control in all respects necessary to protect the public against danger, injustice, and oppression.

In Chicago, Milwaukee and St. Paul Railway Company *v.* Minnesota ² the question of judicial review was squarely presented to the Court for the first time, but the case arose

¹ 128 U.S. 174, 9 Sup. Ct. 47, 32 L. ed. 377.

² 134 U.S. 418 and 458, 10 Sup. Ct. 462 (1st Minnesota Rate Case).

in a somewhat different manner from those previously considered. The State of Minnesota passed a law authorizing the Railroad and Warehouse Commission to prescribe reasonable rates. The State Supreme Court construed the act, in spite of its apparently contrary intent, as conferring final authority upon the Commission. And the Federal Supreme Court held this denial of judicial review a violation of the due-process clause, saying:

The question of the reasonableness of a rate of charge for transportation by a railroad company, involving, as it does, the element of reasonableness both as regards the company and as regards the public, is eminently a question for judicial investigation requiring due process of law for its determination. . . . If the company is deprived of the power of charging reasonable rates for the use of its property, and such deprivation takes place in the absence of an investigation by judicial machinery, it is deprived of the lawful use of its property, and thus, in substance and effect, of the property itself, without due process of law, and in violation of the Constitution of the United States, and in so far as it is thus deprived, while other persons are permitted to receive reasonable profits upon their invested capital, the company is deprived of the equal protection of the laws.

The policy of judicial review was definitely accepted, though not the basis upon which it rests. The dictum of the Commission Cases became law without citation of authority or statement of reason, and clearly without the formulation of any definite basis upon which the review should be conducted or any rules as to when it should be undertaken. That portion of the decisions in the Granger Cases which conferred power upon, or recognized authority in, the legislature to regulate utilities and fix rates binding even upon the courts was finally reversed.

The whole stress of the decision was placed upon the absence of notice and investigation in the rate-making, upon the strict due-process clause as that term had been defined up to this time. Due process still had not been authoritatively extended to include the requirement of just compen-

sation when "taking private property for public use." The basis of valuation was yet to be adopted.

The question arose next in *Chicago and Grand Trunk Railway Company v. Wellman*,¹ and in *Budd v. New York*,² decided on the same day. In the latter case after reviewing the entire field of decisions both federal and state the Court concludes:

In the case before us, the records do not show that the charges are unreasonable, or that property has been taken without due process of law, or that there has been any denial of the equal protection of the laws; *even if under any circumstances we could determine that the maximum rate fixed by the legislature was unreasonable.*

Even yet the Court is feeling its way, is in fact doubtful of its ability to question the reasonableness of the rate. Corporation persistency has not succeeded in making regulation and the public interest subordinate to the financial interest of the investors. Regulation is still regarded as a proper governmental function, to be exercised by the legislature to any extent it deems necessary to further the public welfare. Judicial legislation defining the status of private property within the State is avoided. But there is confusion in the decisions. No definite policy has been worked out. The trouble-breeding dictum of the *Commission Cases* is neither repudiated nor accepted. The decision in the *Granger Cases* is neither reversed nor accepted *in toto*. The Court see-saws first toward legislative regulation and public welfare, then toward judicial interference and private interest.

The facts in *Budd v. New York* differed from those in the *Minnesota Rate Case*. In the former the rate-making power was exercised directly by the legislature. In the latter it was exercised by a commission. If the Court was willing to set any limit at all on State rate-making along the lines indicated in the first *Minnesota Rate Case*, it now indicated

¹ 143 U.S. 339, 12 Sup. Ct. 400.

² 143 U.S. 517, 12 Sup. Ct. 468.

that it was unwilling to extend that limitation to rates directly fixed by the legislature.

Two years later the jumble left by the Budd decision was cleared up to a large extent by the decision in the Reagan Cases.¹

V. Reagan v. The Farmers' Loan and Trust Company

In *Reagan v. The Farmers' Loan and Trust Company*, which rose by way of injunction issued to restrain the Texas Railroad Commission from enforcing rates it had fixed, the Court for the first time treats clearly the question of legislative regulation of private property employed in a public undertaking. After a review of the situation the decision says:

These cases all support the proposition that while it is not the province of courts to enter upon the merely administrative duty of framing a tariff of rates for carriage, it is within the scope of judicial power, and a part of judicial duty, to restrain anything which, in the form of a regulation of rates, operates to deny to the owners of property invested in the business of transportation that equal protection which is the constitutional right of all owners of other property. There is nothing new or strange in this. It has always been a part of the judicial function to determine whether the act of one party (whether that party be a single individual, an organized body, or the public as a whole) operates to divest the other party of any rights of person or property. In every constitution is the guaranty against the taking of private property for public purposes without just compensation. The equal protection of the laws, which, by the Fourteenth Amendment, no State can deny to the individual, forbids legislation, in whatever form it may be enacted, by which the property of one individual is, without compensation, wrested from him for the benefit of another, or of the public.²

¹ *Reagan v. The Farmers' Loan & Trust Co.*, 154 U.S. 362, 14 Sup. Ct. 180, 38 L. ed. 1014; *Reagan v. The Mercantile Trust Co.*, 154 U.S. 413; *Reagan v. The Mercantile Trust Co.*, 154 U.S. 418; *Reagan v. The Farmers' Loan & Trust Co.*, 154 U.S. 420.

² See also *Railway Co. v. Gill*, 156 U.S. 649, 15 Sup. Ct. 484, 39 L. ed. 567. The rate question arose too in *Covington & L. Turnpike Road Co. v.*

The Court does not question the legislature's right to protect the public by fixing a maximum rate, but it reaffirms without limitation the Court's right to review rates and clearly establishes a minimum below which the legislature cannot fix rates and enforce service. With equal clearness the Court subordinates the utility's right to a profit to the right of the public to receive service at reasonable rates, saying:

It is unnecessary to decide, and we do not wish to be understood as laying down an absolute rule, that in every case a failure to produce some profit to those who have invested their money in the building of a road is conclusive that the tariff is unjust and unreasonable. And yet justice demands that every one should receive some compensation for the use of his money or property if it be possible, without prejudice to the rights of others. There may be circumstances which would justify such a tariff; there may have been extravagance and needless expenditures of money, there may be waste in the management of the road; enormous salaries; unjust discrimination as between individual shippers, resulting in general loss. The construction may have been at a time when material and labor were at the highest price, so that the actual cost far exceeds the present value. The road may have been unwisely built, in localities where there is not sufficient business to sustain a road. Doubtless, too, there are many other matters affecting the rights of the community in which the road is built, as well as the rights of those who have built the road.

Value of the property is again recognized as a feasible basis for rate regulation, and as in *Dow v. Beidelman* it is the actual cost or investment which it is assumed will be the controlling figure. In the principal case, however, a limitation is placed upon actual cost. That limitation is reference to "present value," the concept which has brought more confusion into valuation cases than all others combined. And this limitation is imposed not to protect the utility, but because actual cost may have been unjustifiably high.

Sandford, 164 U.S. 578, 17 Sup. Ct. 198; and *Chicago, B. & Q. R.R. Co. v. Chicago*, 166 U.S. 226, 17 Sup. Ct. 571, but no additional ruling of importance was made.

The treatment of the problem is clear, but there is no definite theory upon which the Court proceeds. Its statements considered as independent, abstract legal propositions are indisputable, but considered as a whole they appear conflicting and ambiguous. The gist of the holding seems to be that rates cannot be fixed at a figure which is below the cost of production when proper methods are used and only such investment is made as is necessary for the service rendered. In other words, it is not the actual cost of production, but the theoretical reasonable cost that is in question. The Court for the first time places valuation on a truly economic basis. The economies of monopoly are permitted, but monopoly price is prohibited. The waste of competition is banished, but its benefits arbitrarily retained by fixing prices at approximately the cost of production or competitive figure. The complete advantage of rate regulation is gained by keeping the cost of production below the competitive figure. The disadvantage of regulation is eliminated by basing it on the same economic principle which would have governed had natural competition existed. The public secures the advantage of lower rates, the utility those from greater economy.

One point remains unsettled, i.e., the power of the State to compel service at a rate below the cost of service. Where that cost is greater than the theoretical or reasonable cost the issue is decided in favor of the public. The case does not involve a situation in which the worth of the service to the community is less than the reasonable cost of service.

VI. *The Growth of the Confiscation Analogy*

The fallacy in the line of argument in the cases thus far discussed first bore fruit in the Reagan Case where Justice Brewer intimated the propriety of reasoning in rate cases by analogy with condemnation cases, saying:

If the State were to condemn the railroads, is there any doubt that constitutional provisions would require the payment to the

corporation of just compensation, — that compensation being the value of the property as it stood in the markets of the world and not as prescribed by an act of the legislature? Is it any less a departure from the obligations of justice to seek to take not the title, but the use for the public benefit at less than its market value?

In *Ames v. Union Pacific Railway Company*¹ the analogy was stated again without, however, definitely holding that the two situations were identical.

Such was the status of the law when the epoch-making decision of *Smyth v. Ames*² was rendered. The power of the State legislature to regulate was fully established, but within certain limits only when the power was directed toward rate-making. Rates could not be forced below a figure which would render a fair return upon the "fair value" of the property. What constituted a fair return or fair value remained unsettled. The question of valuation had been brought up in *Covington and Lexington Turnpike Road v. Sanford*, indirectly in the *Reagan Case*, and had been hinted at in *Dow v. Beidelman*, but it had not been definitely adopted by the Supreme Court.

The lower courts had discussed the question more thoroughly. In *Ames v. Union Pacific Railway*,³ the Court warned against unreasonable investment and suggested the condemnation analogy. Two years later, in *San Diego Land and Town Company v. National City*,⁴ Judge Ross

¹ 64 Fed. 165.

² 169 U.S. 466. 18 Sup. Ct. 418, 42 L. ed. 819; Justice Brewer said: "Property invested in railroads is as much protected from appropriation as any other. If taken for public uses, its value must be paid for. Constitutional guarantees to this extent are explicit. . . . The value of the property cannot be destroyed by legislation. . . . The protection of property implies the protection of its value. . . . If the public was seeking to take title to the railroad by condemnation, the present value is that which it would have to pay. In like manner, it may be argued that, when the legislature assumes the right to reduce rates, the rates so reduced cannot be adjudged unreasonable if under them there is earned a fair interest on the actual value of the property."

³ 64 Fed. 165 (1894).

⁴ 74 Fed. 79 (1896). See also *San Diego Land & Town Co. v. Jasper*, 110 Fed. 702 (1901); *Cotting v. Kansas City Stock Yards Co.*, 82 Fed. 850.

held that as cost might be excessive, present value, determined with "due regard to the right of the public," must be controlling.

VII. *Smyth v. Ames*

In *Smyth v. Ames*,¹ a suit brought to test the constitutionality of the Nebraska maximum-rate law, the Court finally definitely settled its right to test the reasonableness of rate regulation, saying:

The idea that any legislature, State or Federal, can conclusively determine for the people and for the courts that what it enacts in the form of law, or what it authorizes its agents to do, is consistent with the fundamental law, is in opposition to the theory of our institutions. The duty rests upon all courts, Federal and State, when their jurisdiction is properly invoked to see to it that no right secured by the supreme law of the land is impaired or destroyed by legislation.

The Court here defines its jurisdiction and for the first time undertakes to state a basis for judicial review. The Court is not concerned with rate-making as such, nor directly with reasonableness of rates. It is only the constitutional guarantees which it must consider. It is only when a rate violates one of these guarantees that it can be brought before the Court. The expediency of the rate is not in issue. The question is, Has the constitutional limitation been violated? — not, Is the regulation reasonable? The former is a judicial, the latter a legislative question. The two must not be confused. The common-law limitation of reasonableness applies as a legal check upon rate-making by the utility, but not upon rate-making by the State.

Failure to keep this distinction in mind and unwillingness to admit that it has been made are responsible for much of the confusion in valuation. Rate-making is a legislative power. The question of reasonableness is a legislative one. The determination of what rights shall constitute

¹ 169 U.S. 466, 18 Sup. Ct. 418, 42 L. ed. 819.

private property at a given time is for the legislature.¹ But the determination of what amounts to a taking of private property for a public purpose, and what a restriction of property without actual taking, is a judicial question. The case leaves the opportunity still open for legislative discretion, and legislative action to protect the public welfare.

The Court next turns its attention to the purpose of regulation and decides beyond question that the protection of the public interest is the paramount issue in rate regulation, saying:

If a railroad corporation has bonded its property for an amount that exceeds its fair value, or if its capitalization is largely fictitious, it may not impose upon the public the burden of such increased rates as may be required for the purpose of realizing profits upon such excessive valuation or fictitious capitalization. . . . What was said in *Turnpike Co. v. Sanford*, 164 U.S. 578, 596, is pertinent. . . . It cannot be said that a corporation is entitled as of right, and without reference to the interests of the public, to realize a given per cent upon its capital stock. When the question arises whether the legislature has exceeded its constitutional power in prescribing rates to be charged by a corporation controlling a public highway, *stockholders are not the only persons whose rights or interests are to be considered. The rights of the public are not to be ignored. It is alleged here that the rates prescribed are unreasonable and unjust to the company and its stockholders. But that involves an inquiry as to what is reasonable and just for the public. . . . The public cannot be subjected to unreasonable rates in order simply that stockholders may earn dividends. . . . If the corporation cannot maintain such a highway and earn dividends for stockholders, it is a misfortune for it and them which the Constitution does not require to be remedied by imposing unjust burdens upon the public.*²

¹ The legislature may limit the rights by destruction of unit rights through the exercise of the State police power.

² It was held in *Chicago, etc., R.R. Co. v. Dey*, 35 Fed. 866, that the interest of mortgage bondholders is an element to be considered and that if the rate fixed prevents interest being paid on the mortgage debt the enforcement of the schedule amounts to confiscation. It is suggested that the mortgage-holder stands in no better position than the stockholder. He has risked his funds in the undertaking. If it was poorly conceived or badly

Having quoted with approval this decision that the interests of the public are paramount to the property interest of the utility the Court proceeds to point out which of those property rights cannot be taken without compensation, prefacing its remarks with a further guarantee of public interest, thus:

It cannot be assumed that any railroad corporation, accepting franchises, rights, and privileges at the hands of the public, ever supposed that it acquired, or that it was intended to grant to it, the power to construct and maintain a public highway simply for its benefit, without regard to the rights of the public. But it is equally true that the corporation performing such public services, and the people financially interested in its business and affairs, have rights that may not be invaded by legislative enactment in disregard of the fundamental guaranties for the protection of property. The corporation may not be required to use its property for the benefit of the public without receiving just compensation for the services rendered by it.

The Court has set a minimum limit on rate-making — the theoretical cost of producing the service plus a return. The actual cost of production is immaterial.

The Court proceeds to define this minimum limit with more exactness, thus:

The utmost that any corporation operating a public highway can rightfully demand at the hands of the legislature, when exercising its general powers, is that it receive what, under all the circumstances, is such compensation for the use of its property as will be just both to it and to the public.

The market value of outstanding securities and the existing capitalization of the utility were rejected earlier in the opinion, as unjust to the public. What would be just remains undecided.

The contention of the State was that any legislative-made rate schedule, providing necessary operating expenses and a sum in addition thereto, would be reasonable, managed, the consumer who exercised no judgment in making the investment cannot be required to make good the loss from the bondholder's own folly.

the amount of the additional sum being purely a legislative question not open to judicial review. The roads contended that the schedule must provide a fair profit on the entire capitalization, watered and real. The Court took a stand midway between these views, saying:

We hold, however, that the basis of all calculations as to the reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth.

Thus the valuation test of the constitutionality of State legislative rates, hinted at in previous decisions, is fully established, by the very justice who repudiated it in his dissenting opinion in the Commission Cases.

Valuation is accepted as a substitute for the analogy with condemnation cases, which Justice Brewer suggested, and to which Justice Harlan makes no reference. There is no intimation that the valuation here suggested should be the same as that in condemnation proceedings. The elements of value in that class of cases had been fully stated by the courts. That Justice Harlan considered a definite statement of the elements of value for rate-making purposes necessary, and did not fashion that statement on condemnation lines, indicates that he did not consider the two

analogous. That he included in that statement elements never considered as value in condemnation cases leaves little room to doubt that the Court rejected the condemnation theory.

VIII. *The Condemnation Theory*

It may not be out of place to digress at this point and consider that theory. It has acquired undeserved prominence because it works emphatically to the benefit of the utilities, and because writers on valuation have asserted without careful analysis that the valuation test of the reasonableness of rates had its origin in the condemnation analogy. The analogy has never been definitely accepted by the Supreme Court. The lower courts, however, have qualifiedly stated the relationship ¹ in several cases, and frequently considered the analogy without definitely stating it.² But a preponderance of the decisions, even in the lower courts, have flatly rejected the theory and clearly pointed out inconsistencies in valuing public-service property for rate purposes according to the standards set for condemnation cases.³

In *Spring Valley Water Co. v. City and County of San Francisco*,⁴ the Court stated that:

¹ *Spring Valley Water Works v. San Francisco*, 124 Fed. 574; *Kings County Lighting Co. v. Willcox*, 156 App. Div. N.Y. 603; see also *San Diego Water Co. v. San Diego*, 118 Cal. 556.

² *Oshkosh Water Works Co. v. Railroad Comm. of Wisconsin*, 152 N. W. 859; P.U.R. 1915-D-336; *State ex rel. Oregon R. & Navigation Co. v. Clausen*, 116 Pacific (Wash.) 7, dictum; *State ex rel. Bee Building Co. v. Savage*, 65 Neb. 714, 91 N. W. (Neb.) 716, dictum; etc.

³ *Pub. Serv. Gas Co. v. Bd. of Pub. Util. Commissioners*, 87 Atl. 651 *Re Manitowoc Water Works Co.*, 7 W.R.C.R. 71; *Re Queens Borough Gas & Elec. Co.*, 2 P.S.C. (1st. Dist.) N.Y.; *Mayhew v. Kings County Lighting Co.*, 2 P.S.C. (1st. Dist.) N.Y.; *Spring Valley Water Works v. San Francisco*, 192 Fed. 137; see also *Willcox v. Consol. Gas Co.*, 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 382; *Omaha Water Works Co. v. Omaha*, 218 U.S. 180, 202, 54 L. ed. 991, 30 Sup. Ct. 615; *Rept. of Nat'l Ass'n of Ry. Commissioners*, 23d Convention, Oct. 1911, p. 145; *Rept. of Mass. Joint Comm. on N.Y., N.H. & Hartford R.R. Co.* 1911, pp. 51-154.

⁴ 165 Fed. 667.

The idea that a valuable franchise could be taken in condemnation proceedings, without compensation, would not be tolerated for an instant and to permit such a franchise to be taken without consideration indirectly, by means of rate regulation, is equally obnoxious to the Federal Constitution.

The analogy was absurd, and the Supreme Court at approximately the same date refused to include any franchise value other than such as had been established by statute.¹ It is by the recognition of elements of value in rate cases which have no place in condemnation proceedings, and the refusal to recognize elements which are essential to a valuation for eminent-domain cases, that the fact is most clearly brought out that no ground for analogy between the two exists.

The analogy with condemnation cases has arisen in two ways, by comparison of rate-making proceedings and condemnation cases, and by comparison of valuation for condemnation and for rate-making. The theory which supports the analogy between the two types of proceedings is inherently unsound. Condemnation under the power of eminent domain is the taking of private property for public use on payment of due compensation. The payment of just compensation whenever private property is taken is compulsory under "the law of the land" and the Federal Constitution. If the analogy holds true and a rate reduction takes private property, there must be compensation proportionate to the reduction. The vicious circle is encountered again.

A more logical explanation of the tangle is that the public takes the use of utility property because of the common-law requirement that all applicants must be served; and that rate-making fixes the compensation for the taking. Rates paying fairly for the use are legal; those returning less are unconstitutional. The argument is false from the

¹ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 332.

economic viewpoint because the owner gets profit, not rent, and it does not fit the legal situation. Jurists insist that regulation and rate-making are an exercise of the police power, not of the power of eminent domain. And the police power takes property without compensation.

It might be argued that the due-process clause applies to the taking of profits rather than use, and that earnings above a certain point are not private property and for that reason can be taken with immunity by the public, but below that point earnings are private property and cannot be taken without compensation. Such reasoning would comply with the social theory which holds all return above a reasonable profit to be the property of the public. But so long as the taking refers to earnings, the vicious circle remains, for earnings are dependent upon rates.

There is only one solution of the situation created by judicial interpretation. It is that what is taken is neither the property, the use of the property, nor the profits. The service and nothing but the service is taken.¹ So long as the consumer pays the just rate for the service there is purchase of service, but no taking by the State. The moment the State prohibits the utility from collecting that rate, there is a taking of service. The rate was fixed by the common law and the Constitution has not changed the limitation. The criterion is the reasonable worth of the service taken.

When the legislature fixes a rate below the point of reasonable return, it is exercising its power of eminent domain, by taking service in addition to that which the consumer pays for, and the courts may intervene on the basis of failure to use due process of law by reason of the neglect to supply adequate compensation for the service taken. When the

¹ The property may inadvisably be employed in producing a public service under conditions which preclude a profit if the service is sold at its reasonable value. In such cases rates which paid the full worth of the service to the consumer would be constitutional, though no profit were provided.

legislature fixes a rate above that point, it is exercising its rate-making power and the courts cannot interfere. The legislature has at no time had any thought of condemning the property, and no court has determined just compensation. But these elements of the situation prove the failure to employ due process, rather than that the power of eminent domain has not been exercised when the rate is unreasonably low.

Two separate and distinct governmental powers are under consideration, the police power and eminent domain. The differences between them are many. In condemnation cases the title to the property is taken, all use of the property by the former owner is prevented, all elements of value, in so far as he is concerned, are destroyed. In rate cases not the title to the property, nor even the privilege to use it in any certain manner is taken, but the privilege of asking more than a certain return for the use of the property in a certain manner is denied. No attempt is made to compel such use. No force is employed to prevent other uses. At most but a minor element of value is destroyed in rate cases as opposed to all value in condemnation cases. Rate-making, therefore, involves no payment of compensation for the value destroyed. It is destruction for the common good. It is not taking at all. The State receives nothing. Nothing is to be paid for. The utility is merely prevented from appropriating the public interest in profits for private benefit, restrained from violating the common-law obligation of serving at a reasonable rate. Condemnation takes value. The State receives value and must make payment for it.

When a certain point has been reached the Court says: thus far rate-making may go and no farther. If rates are reduced lower, the utility will not be paid the worth of the service. The State is no longer restraining private appropriation of public interest; it is appropriating private interest. The difference between the rate the consumer says

and the reasonable rate is taken by the State for the public welfare. If such taking is deemed necessary in the interest of society, it must be accomplished through the power of eminent domain and compensation must be made for the loss. Rate-making is confined to the determination of the fair return.

The law is interpreted to-day as it has just been stated. It is illogical and confusing. It strains legal theory to the breaking point. It is wholly out of accord with the fundamental concepts of the Nation's legal system. But it is binding. It is the suspended axe under which legislatures and commissions must exercise their rate-making powers. Such an interpretation of the law is based upon the fundamental distinction between public utilities and other industry, yet it absolutely ignores that distinction. This inconsistency has bred the great majority of misunderstandings that have blocked the successful application of the valuation theory.

There is no possible application of the condemnation analogy to property valuation for rate-making which is not inconsistent with the fundamental principles of government control and with the theory of private property itself. The value of the service which would be taken without compensation if the unreasonable rates were enforced, is the only value which is to be determined by condemnation methods under the legal theory of rate-making. The value of the physical property of the utility is not fixed for rate-making upon that basis, for such property is not taken.

The conception of rate-making as a condemnation process is a regrettable attempt to reinstate *laissez-faire*, individualistic ideas and apply them to a legal and economic situation wholly out of accord with those principles. The result is that the courts and commissions have been forced to disregard the makeshift doctrine at fully as many points as they have been able to apply it. Inconsistencies, confusion, and unsuccessful regulation have been inevitable, and

will remain so until the Supreme Court of the United States summons up courage directly to reverse itself and disregard the hybrid to which it has given birth.

A reversal of position as to the due-process clause in its application to legislative action under the police power would not necessarily carry with it a rejection of the valuation doctrine. It would not lessen the protection afforded private property, nor lower the return allowed for utility service. The public utility has undertaken the conduct of a governmental function for the benefit of the public, because the Government has deemed it expedient to have that function performed by private individuals under government control. A general public offer has been made to induce capitalists to undertake this service. An implied condition of that offer, absolutely essential to its success, is that fair remuneration will be allowed for the service rendered. It would be irrational to assume that the offer of the State would be accepted by an individual unless it did contain such provision. The privilege of collecting rates is given to the utility as consideration for undertaking the service. These rates are in reality taxes levied directly on those who derive the benefit in much the same way as a special assessment is apportioned. The acceptance of the offer constitutes a binding contract between the State and the individual undertaking the service. In undertaking the public service the utility submits itself to the obligations imposed by the common law. It assumes a heavy burden which carries with it the implied right to collect a reasonable return for rendering the service. The government, by compelling the company to serve all applicants and by accepting the service, obligates itself to make reasonable payment for it. The contract between the State and the utility, in the absence of a specific provision to the contrary, raises an implied agreement as to rates. The obligation of the contract cannot be impaired by the State without violation of the Federal Constitution. The consideration contemplated by the terms

of the implied agreement is paid, so long as the payment made to the utility by way of rates collected for the service rendered adequately compensates the utility operator; and if the State does not prevent this by regulation it has performed its part of the contract. The moment the State reduces charges for service below the point of adequate compensation, the rates become unreasonable, the contract obligation is impaired, and the State has violated the provisions of the Federal Constitution. The law fixing such a rate is, therefore, unconstitutional. The result of such an interpretation of the law gives to private property the same protection that it enjoys under the condemnation theory, so far as that theory can be put into practice at all. It is in accord with the legal theories of American jurisprudence and with the fundamental principles of private property and government regulation. It does not strain legal theory as the application of the condemnation analogy to the operation of the police power does. It unfortunately, however, is not the interpretation adopted by the courts or that to which valuation must conform. Its acceptance would clear the confusion produced by the application of the individualistic theories to a quasi-public undertaking. But it has not been accepted. A statement of it may assist the reader in unraveling some of the tangled threads of the valuation process, but it can be of no further service.

The argument that a valuation for rate-making purposes should be computed upon the same basis as a valuation for condemnation proceedings is as erroneous as the application of the analogy to the exercise of the police power. To view the question properly it is necessary, at this point, to analyze the actual proceedings in rate cases.

A public-utility rate proceeding arises thus:

The legislature either directly, or by delegation of its power to a commission created by it, fixes the rate which it will permit the utility to charge. In doing this it exercises an undisputed legislative function. One of the public utili-

ties subject to the schedule or rate thus fixed conceives the idea that the rate is unreasonable. Its constitutionality is attacked in the courts. Their sole duty is to decide the constitutional issue — the constitutionality, not the reasonableness, of the rate is in question.

The complaint states that part of the bundle of rights which constitute the private property employed in the utility business has been taken by the public; that this taking is such as can be accomplished only under the power of eminent domain after just compensation; that the taking has been attempted through the exercise, not of the power of eminent domain, but of the police power, and is therefore without due process of law, and that as such taking is confined to public utilities they are denied the equal protection of the laws, all in violation of the first section of the Fourteenth Amendment to the Federal Constitution.

The right to make a return on the property is the only right in the whole bundle affected, and it is affected only to the extent of the difference between the rate fixed and the reasonable rate. That part of that property right is indirectly taken. The rights of possession, of disposal, and of use are untouched. The condemnation theory of valuation proceeds directly contrary to fact and considers all rights as denied, for such is the case where the property is taken by eminent-domain proceedings. When a water plant is condemned, the entire premises, the complete equipment, is taken. Abandoned machinery still on the premises and equipment far in excess of present needs, though neither used nor useful for utility purposes, must be paid for as part of the plant. In a rate valuation such property is not included. Service is taken and the worth of the service must be paid by way of compensation. Such property adds nothing to the value of the service, so cannot be considered. The right to a return is affected. And the owner has a right to a return only on that part of the property that is actually used and useful in rendering the public service.

Similarly lands and privileges granted to the utility by the public have no place in a valuation for rate purposes, for the property was donated to facilitate the public use, not private gain, and the gift carried with it no right to a return upon the property. The donee holds but the naked title of a trustee, the return reverts to the public as *cestui que trust*. Denial of a return on such property is restrictive action under the police power in protection of the public's interest, not a taking of private interest.

Advocates of the condemnation theory have been found, however, who will sacrifice the part to save the remainder, and claim that that which is taken can be valued by the same process which is applied in condemnation cases. When this stage is reached the value to the utility of the condemnation theory is practically destroyed, for its main objective is the saving to the utility of a rate of return on property not properly included in a rate valuation. Even at this point, however, the theory will not stand analysis.

Rate-making values property not to determine a price to be paid for the property itself, but to fix the reasonable cost of the service it helps to render. Condemnation proceedings value property to estimate the reasonable price to be paid for the property itself. The two cases cannot with fairness be decided by the same standards. If a condemnation valuation were adopted for both, the public interest would be sacrificed in rate cases. If a rate valuation were adopted, the utility's private rights would be violated in condemnation cases. The reason back of the desire to carry the condemnation theory to rate cases is now apparent. There remains to be considered the extent to which the courts have been misled by insistent appeal to this analogy on the part of counsel for the utilities.

IX. *San Diego Land and Town Company v. National City*

Reverting then to the consideration of the development of the theory of valuation, we find that the questions pre-

sented in the case of *Smyth v. Ames*, last discussed, were brought before the Court again the following year in the case of the *San Diego Land and Town Company v. National City*.¹ After reviewing *Smyth v. Ames* and *Covington Road Company v. Sandford*, the Court adds to the test of rate regulation set up in the former case the element of reasonableness to the public, protected fully in the earlier case, but not definitely included in its enumerated items of the elements of value. The Court said:

The contention of the appellant in the present case is that in ascertaining what are just rates the Court should take into consideration the cost of its plant; the cost per annum of operating the plant, including interest paid on money borrowed, and reasonably necessary to be used in constructing the same; the annual depreciation of the plant from natural causes resulting from its use; and a fair profit to the company over and above such charges for its service in supplying the water to consumers, either by way of *interest on the money it has expended for the public use*, or upon some other fair and equitable basis. Undoubtedly all these matters ought to be taken into consideration, and *such weight be given them when rates are being fixed as under all the circumstances will be just to the company and to the public*. The basis of calculation suggested by the appellant is, however, defective in not requiring the real value of the property and the fair value in themselves of the services rendered to be taken into consideration. What the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public. The property may have cost more than it ought to have cost and its outstanding bonds for money borrowed and which went into the plant may be in excess of the real value of the property.

The new element to be considered is "the fair value in themselves of the services." The value of the property cannot determine the rate regardless of the value of the service rendered. It is the theoretical or reasonable cost of service which the court seeks to determine, not the actual cost.

The case brings out, too, the point that the enumeration of elements of value in the *Ames Case* is not the establish-

¹ 174 U.S. 739, 19 Sup. Ct. 804, 43 L. ed. 1154.

ment of a rule of valuation. The elements set forth must be considered in relation to the circumstances of the case. Outstanding bonds may be disregarded where they represent no real value. Original cost must be restricted to reasonable cost, etc. The elements stated in the Ames Case may or may not be entitled to consideration depending upon the particular circumstances in question.

X. *Valuation as a Test for Individual Rates*

Thus far the valuation theory has been applied to determine the reasonableness of entire rate schedules only. Its applicability in cases involving a single rate is still to be affirmed. That problem came before the Court in the case of the Minneapolis and St. Louis Railroad Company *v.* Minnesota,¹ wherein the Court held a rate on coal in carload lots reasonable and non-confiscatory, though if all freight were subjected to a similar rate the road would not be able to earn operating expenses.

In the case of the Northern Pacific Railway Company *v.* North Dakota² the question arose again and the Court held that the rate on coal could not be placed at so low a figure that the carriage of the coal would not produce a reasonable return in addition to operating expenses, etc., even though the total return to the railroad from all traffic carried would be adequate. The Minnesota Case was distinguished on the ground that the rate on coal there established was not shown to be an unreasonable rate for the coal traffic itself.

The valuation doctrine of the Ames Case is therefore to be applied both to the return from any given rate and to the return from the entire rate schedule.

XI. *The Recent Decisions*

The recent decisions, with one exception, add nothing to the fundamental valuation principles thus far developed. They determine the propriety of including or excluding

¹ 186 U.S. 257.

² 236 U.S. 585, 59 L. ed. 735.

specific elements of value, or of arriving at fair value by this or that method.

The exception is the decision in *Knott v. The Chicago, Burlington and Quincy Railroad Company*, commonly known as the Missouri Rate Case.¹ In this proceeding the Supreme Court condemned valuation for rate purposes arrived at by multiplying the tax assessment figures by three. Aside from the statement that valuation for rate control must be made with this purpose in view, which may be radically different from that in other valuation proceedings, the case adds nothing to those already discussed.

XII. Summary

The growth of the valuation theory has been gradual. For a number of years after it was first suggested the courts hesitated to interfere in rate-making lest they should assume legislative functions. But the laws they were placed in office to enforce, the Constitution, and the procedure, all having been developed during the ascendancy of the individualistic *laissez-faire* epoch, sanctified private property to such an extent that the Court found itself constrained to intervene. Rate control through commissions was subjected to the limitation of reasonableness. The check was vague. The Court was feeling its way. Without defining the limit the Court extended it to direct legislative rate-making. Pressed by extreme adverse criticism and wholesale, unveiled charges of having resorted to judicial legislation in the interest of wealth, the Court sought a basis for its interference. The condemnation analogy, which likened valuation for determining the cost of service to valuation for fixing a price on the property valued, was tested and discarded. The analysis of the due-process clause which was forced into prominence just at this time, by its reference to the "law of the land," supplied the argument.

The police power is restrictive in its action. It may de-

¹ 230 U.S. 474, 33 Sup. Ct. 975.

stroy property to protect the public, but it cannot take it for the public, without compensation. The law of the land requires compensation when property is taken. The police power, therefore, cannot be extended to the actual taking of property. The courts were unwilling to consider rate-making except as an exercise of the police power. They declined to classify it as condemnation of the service. A sort of hybrid theory of regulation resulted, which holds that the State, in the exercise of its police power, may limit the return to prevent the utility from appropriating the interest of the public, but cannot take the service without paying the utility what it is really worth. When such a point in rate-making is reached the power of eminent domain, not the police power, is enforced, and the due process required by the Fourteenth Amendment is lacking if compensation is neglected. The equal protection of the law is denied the utilities because other business is not subjected to such confiscation. The right of the judiciary to intervene and enforce the constitutional safeguards of property was established.

The tests to be applied in that intervention were not decided upon at first. Valuation had been suggested and rejected before the power to review rate-making was established. The only form of valuation known was that applied in condemnation cases. It did not fit the situation because the value of the utility's property was sought to determine the cost of the service, not to fix the price of the property. The Court hesitated to adopt valuation, but finally took the step. Having done so, it realized the opportunity for injury to the public welfare which rate-making sought to protect and hastened to place conditions upon valuation. Capitalization, the value of outstanding securities, the actual value of the property, because they might be excessive and represent poor management or even fraud, could not be accepted as the criterion of value. Wear and tear on the equipment required a reduction of value by way of depreciation.

In glaring generalities the situation was summed up by saying that the utility was entitled to a "fair return" upon the "present fair value" of the "property used and useful" in rendering the public service, and the public was entitled to service at a figure not above its actual worth. None of the decisive terms were defined by the Court.

CHAPTER IV

THE THEORY OF VALUATION

I. *Valuation and Economics*

The place of valuation in public-utility regulation is a legal question, but the principles applied are economic. Valuation, like any other legal action, may disregard economic principles, but is bound to prove unjust and unsatisfactory if it does so. The business world is controlled by economic laws. Legislative or judicial action taken without regard for those laws inevitably produces friction, economic waste, and political dissatisfaction.

It is not difficult to learn the rules which form the law of valuation, but that law is in an admittedly chaotic state, and it avails little to segregate the authentic statements of the courts from discarded principles and dicta. The decisions have been stated chronologically to show how one was built upon another to arrive at the final conglomerate structure. An attempt has been made to consider them and say herein did the Court err or at this point legal requirement departs from economic principles. But this is solely adverse and destructive criticism. Constructive thought is needed. Little aid can be derived from the knowledge that the law is in conflict with economic rules if we do not learn the nature of the conflict and determine how it can be avoided. It is for this reason that we have braved the charge of irrelevancy and gone below the surface of valuation law to consider the status of property and the general aims of regulation before discussing the development of the valuation principle or attempting to analyze it.

II. *The Meaning of Value*

The first problem in considering valuation is the definition of "value." It must be admitted at the start that the

term is used with widely varying meaning. Economists have always recognized the vernacular use of the term and the numerous resulting ideas of value, though Economics itself has been almost exclusively concerned with "exchange value." Even the ancient thinkers recognized the twofold division of value with which Adam Smith confused economic thought for decades.

Value may be either subjective or objective. We may speak of heat or light value as well as exchange value. The term may be synonymous with utility. It may mean abstract purchasing power, purchasing power measured in commodities or in money, the average price, or the "proper and legitimate price."

Professor Hadley has drawn a twofold division, even within the field of economic value, which is of particular interest here. He classifies value according to a commercial and social theory closely allied to the dual nature of property already considered. He says:

Value being essentially an ethical term, we may have as many different theories of value as there are different views of business ethics. But these views fall under two main heads: The commercial or competitive theory which bases value upon what the buyer is willing and able to offer for an article; and the socialistic theory which bases it upon what the article has cost the seller in the way of toil and sacrifice.¹

The loose usage of the term "value," antedating by centuries the valuation doctrine, and the disagreement of economists even as to the fundamentals of economic value itself, should suggest the scholastic folly of the superficial squabble over the propriety of using the term "valuation" in utility regulation, which has marred much of valuation literature. The term "fair value," however regrettable, has been irrevocably incorporated in our vocabulary and must be accepted. This being true, time can be spent with more

¹ Hadley, *Economics*, sec. 105.

profit in determining the meaning of the term than in questioning the judgment displayed in adopting it.

III. *The Varying Uses of Valuation*

The greater part of valuation literature has dealt with the determination of fair value for rate-making purposes. This, however, is but one of the many phases of the question. Valuation is a part of the general regulatory programme. It underlies almost every feature of regulation. In addition to its place in rate-making, it serves as a basis for control of capitalization to prevent stock-watering. It fixes the foundation of security issues and enables the Government to protect the stockholder, the bondholder, and the consumer from illegitimate financial practices. It forms the basis upon which questions of purchase and sale are decided, reorganizations and consolidations permitted, taxation levied, and private plants taken over by the Government.

It requires little consideration of regulatory problems to arrive at the conclusion that valuation for capitalization, for purchase and sale, for rate-making, and for taxation purposes cannot all be made upon the same basis. There are as many forms of valuation as there are distinct phases of regulation based upon property value.¹

¹ Proceedings of National Ass'n of Ry. Commissioners, 1911, p. 145, 1913, p. 279; see also Report of Mass. Joint Comm. on N.Y., N.H. & Hartford R.R. Co., Feb. 15, 1911, p. 55; In re Express Rates, Ind. R.R. Comm. No. 495; "The fact that the State has taxed the company upon its franchises at a greater value than is awarded them here is not material," *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 51, 29 Sup. Ct. 192; 53 L. ed. 382; *Hill v. Antigo Water Co.*, 3 W.R.C.R. 623, 728; In re Manitowoc Water Works Co., 7 W.R.C.R. 71, 72; "Value is an elusive term, and what may properly be a value for one purpose may be entirely improper as a value for another purpose." In re Stockton Terminal (Cal.), 19 Am. T. & T. Co. Comm. Leaflets, p. 208; *Fuhrmann v. Cataract Power & Conduit Co.*, 3 P.S.C. (N.Y.) 2d Dist. 656, 691; *Public Service Gas Co. v. Bd. of Public Utility Comm. (N.J.)* 87 Atl. 651, 658; etc. *Contra*. *State ex rel. Bee Bldg. Co. v. Savage*, 65 Neb. 714, dictum; *St. Louis & S.F.R. Co. v. Hadley*, 163 Fed. 317; etc.

In valuing a public utility for tax purposes it is immaterial to what use the property is put, or what return it produces. In valuing the same utility for rate-making the use of the property becomes important and in fixing the sale value the return may be considered. The purpose of valuation is different in each case. In levying a tax the private property of the utility stands in no different position from other private wealth. The public interest in the use of the property is not involved. In purchase-and-sale cases that interest is in question only indirectly because the valuation fixed may have a bearing upon future rate cases and financial regulation. In rate cases the public interest is predominant.

IV. *Fair Value not Exchange Value*

It is clear, since no one standard of value is applicable in all cases, that "fair value" is not exchange value.¹ Valuation for rate-making cannot be exchange value, for that itself depends upon rates and income, and rates and income are the very things which valuation alters. The fair value for rate-making must be determined before exchange value can be found; therefore the two cannot possibly be identical. The two values are antagonistic. It has been pointed out that the purpose of regulation is to destroy value. Private interest is wiped out as inconsistent with the public interest. In determining commercial or exchange value the process would be to ascertain the net earnings under present rates, by deducting operating expenses, depreciation, and taxes from gross revenue, and capitalize these, taking into consideration appreciation of land and the value of property not used in the public service. It is to avoid exactly this valuation, rates based thereon, and the speculative element

¹ See *In re Westchester St. Ry. Co.*, wherein Chairman Stevens, of the New York Second District Public Service Commission, attempts to prove the contrary, and the dissenting opinion of Commissioner Sague. 3 N.Y.P.S.C. 2d Dist. 286.

resulting therefrom that regulation exists. Fair value for rate purposes, therefore, usually destroys existing exchange value, and while it cannot be said to create a new exchange value, it forms the basis upon which one will be created whenever the occasion arises.

Rate-making value differs from exchange value in that it deals only with property used and useful in rendering the utility service, thus excluding many elements which enhance the value of the property for exchange purposes. Rate value cannot even be said to be the exchange value of that portion of the property valued.¹

The reward for efficient management, which is a legitimate element in exchange value, is excluded from valuation for rate-making because that phase of regulation is cared for by adjustment of the rate of return allowed on the value ascertained. Going value as a separate element is similarly denied, for aside from that part of such value recognized either as development expense, the physical value of services, etc., or reward for efficient management, it has no place in the rate basis of a regulated monopoly.

V. *Valuation for Rate-Making*

The determination of fair value as an element of public-utility regulation arose in rate cases. It bears the plain stamp of its origin. Failure to realize this has bred confusion. Rate valuation is distinctly different from all other valuation. In rate-making the value sought is that socialistic value based upon cost to the owner in the way of toil and sacrifice, as stated by Professor Hadley.² It is in reality the cost, not the value, of the utility property that is con-

¹ R. L. Hale in his thesis on *Valuation and Rate-Making*, p. 37, suggests that the Court may have been attempting to determine the exchange value of a part of the property, but having pointed out that such a theory would permit only of rate regulation upward he concludes that: "It is not entirely clear, however, that the Court meant by 'fair value' the exchange value of the physical property (plus the franchise)." Page 40.

² Hadley, *Economics*, sec. 105, cited above, sec. II.

sidered. In purchase and sale, in taxation, in condemnation in government-purchase cases, property value of one sort or another is determined. But this is not true of rate valuation in so far as property is concerned. The value of the service is in question, but the cost and not the value of the property is involved.

Valuation for rate-making purposes is a purely legal concept. It is wholly distinct from economic valuation in general. Economics recognizes two forms of valuation. Where the object to be valued is freely reproducible, the reproduction cost determines the value. When the object is not freely reproducible, because of monopolistic conditions, skill not to be duplicated, etc., the economic value is determined by capitalization of earnings. If economic value were sought, public utilities would be valued by capitalizing earnings, not because the utilities are monopolistic, or operate under a franchise, but because of the skill, the risk, etc., entering into their construction. It is, however, to avoid exactly this valuation that regulation is undertaken. It is because any substitute for competition would base rates on this valuation that rate-making must be considered more than a substitute for competition.

The public utility is not in the same category as other industries. The capitalized earnings test cannot be applied because it results in the vicious circle in the case of utilities. The service rendered is governmental. Regulation is not restricted to the prohibition of discrimination and refusal to serve. It extends to rate control. The public has an interest in the profits. The private property is altered by being subjected to a serious encumbrance. It is absurd to argue that the encumbrance does not change the value, or that the public interest in profits requires a different form of valuation. Economic valuation seeks market value and market value cannot be determined until rate value is fixed. A true understanding of "fair value for rate-making purposes," as that phrase is now used, can be gained only when

the distinct legal and economic status of private property devoted to a public use is kept clearly in mind. The difference between the heavily encumbered value of private property devoted to a public use, and the non-freely reproducible industrial plant, is as great as the difference between such a plant and freely reproducible property. The economic theory of valuation is applicable for regulatory purpose only where the public interest in profits is not involved and the market value of the property is sought.

The aim of rate regulation is to subordinate private gain to public welfare; to prevent the utility from appropriating that part of the profit which, because the business is governmental, belongs to the public and must be given to them by way of better service or lower rates; to reduce the exchange value of the private property constituting the utility plant and equipment by reducing rates, below the figure they would take in the absence of regulation, to a sum called the reasonable rate. The legal rate is established primarily to benefit the public; therefore, it cannot be above the commercial value of the service. It must be, under a private-ownership system, a rate which will attract capital, and not amount to confiscation; therefore it cannot be below the reasonable cost of production plus a fair return. Usually there is no conflict between these limits. A rate to produce a fair return to the utility need not be above the fair worth of the service to the public, unless very poor judgment has been displayed by the promoters.¹

¹ The constitutional limitation merely states whether the rate can be fixed under the police power or must be established by way of eminent domain with just compensation. There is no legal prohibition against forcing rates below a remunerative point where conditions demand it. The primary obstacle in such cases is the necessity of operating with private capital. The commissions, however, have not hesitated to apply the limitation based on the value of the service strictly when necessary. Commissioner Shaw, of Illinois, deals with the situation in the Ardmore Water Case, No. 4670, thus: Commissions and courts "have held that a rate for utility service must be fair, alike to a utility and the public, but *above all the rate shall not exceed the value of the service rendered, regardless of losses which*

It has been universally stated that the test of rate reasonableness is dual, and that the two elements are wholly distinct, even antagonistic. It has been pointed out that if the limit of a reasonable rate is the same by both tests, it is but a coincidence; that there is far more likely to be a zone between cost of service plus fair return and worth of service, within which any rate fixed will be reasonable tested by either criterion. Such discussion is needlessly confusing. Under a system of private ownership the reasonable cost of service and the worth of the service are normally

are to be suffered by a utility which may inadvisably have installed a plant under and amidst adverse conditions [quoting from and citing *Grafton County Electric Light & Power Co. v. N. Hampshire*; *Campbell v. Hood River Gas & Elec. Co.*; *Bogart v. Wisconsin Tel. Co.*; *In re Bound Brook Water Co.*; *Oklahoma Gin Co. v. Oklahoma*; *In re Bridgeport Natural Gas & Oil Co.*; *Geer v. Baltimore & O. R.R. Co.*; *In re Charles Town Water Co.*; *Butler v. Lewistown A. & W. St. Ry. Co.*; *In re Colorado Springs Light, Heat & Power Co.*; *Smyth v. Ames*; *Simpson v. Shepard*], although the petitioner herein has prayed that this commission fix water rates for the village of Ardmore based upon a valuation of its properties, such rates obviously would exceed the value of the service; and this commission cannot find such rates to be reasonable in this particular case." See also *Brunswick & T. W. Dist. v. Maine Water Co.*, 99 Me. 371; "The Public cannot be charged more than the service is worth, regardless of whether the gross returns received from such rates give a fair return upon the reasonable investment or not, for the public duty which the company fundamentally owes its customers makes obligatory upon it the rendering of service at fair rates for the service required regardless of any other considerations," *State ex rel. R.R. Comm. v. Seaboard Air Line Ry. Co.*, 48 Fla. 129, 37 So. 314. In the Minnesota Rate Case the Supreme Court of the United States forced the railway to carry coal at a rate below the cost of service, and in *Cotting v. The Stock Yards* a dictum recognizes worth of the service as the supreme test of reasonableness. *Interstate Commerce Comm. v. Chicago, Gt. Western R.R. Co.*, 14 Fed. 1003; *Planters' Compress Co. v. Chicago, C. C. & St. Louis R.R. Co.*, 11 I.C.C. 382; *Planters' Compress Co. v. Mo. K. & T. R.R. Co.*, 11 I.C.C. 606; *Memphis Cotton Oil Co. v. Illinois Central R.R. Co.*, 17 I.C.C. 313; *National Hay Ass'n v. Michigan C. R.R. Co.*, 19 I.C.C. 34; *In re Advance on Coal to Lake Ports*, 22 I.C.C. 604; *Coke Products Ass'n of Connellsville v. Baltimore & O. R.R. Co.*, 27 I.C.C. 125; etc. There is, however, a line of cases represented by *Clyde v. Richmond & D. R.R. Co.*, 57 Fed. 436, which hold that worth of service cannot be considered, but these decisions are not in point, for they discuss worth of the service to the individual consumer, not to the public.

identical, irrespective of how widely actual cost differs from the worth of service. The only time the worth of the service can fall below the cost, using the term "cost" as justifiable or reasonable cost, is when a service is rendered in a community too small or too poor to afford such service. Private ownership attempting to support itself on the return from rates has no place under such circumstances. Government ownership, subsidized private operation, or abandonment of service is imperative. Where the conflict is apparent rather than real, and results from poor judgment or bad management, the situation can be remedied by compelling the utility to make actual cost of service correspond to the reasonable cost.

Value of service, being synonymous with reasonable cost of service, may be disregarded without endangering the public interest it protects. We are, therefore, concerned solely with the determination of cost. But the cost we deal with is the reasonable not the actual cost; otherwise the value and cost of service are not equivalent and the former must prevail, for it represents the social interest and is superior to private rights which themselves exist only to promote the public welfare.

Under competitive conditions the rate tends to approximate the cost of service. Capital flows freely into the utility field at this figure. Regulation eliminates the risk due to competition, and allows the savings available through monopolistic production and rewards efficient management. The utility can have no cause for complaint, therefore, when the rate-making body adopts cost of service as the basis for charges. What constitutes "cost of service" is the prime question.

Cost of service might be considered from either of two angles, that of private interest and that of the public interest. The former would be the proper viewpoint under the *laissez-faire* system, upon which our economic theories are almost wholly based. The latter is the only rational stand

when such a system has been abandoned and regulation instituted. The fundamental economic rules cannot be disregarded, but, on the other hand, economic principles based upon a *laissez-faire* policy must be disregarded. The public interest must predominate, for the private rights exist only to promote the public welfare. We approach the cost question, therefore, with an intent to promote the public good, even at the expense of private rights. We recognize but two limitations upon this purpose, that imposed by the Fourteenth Amendment, which provides that beyond the point at which rate-making takes instead of restrains, regulation must proceed under the power of eminent domain instead of the police power; and that dictated by the necessity of attracting capital or abandoning private operation.

So long as the State remains committed to private ownership, it may well be considered estopped from asserting that public interest extends further than the point which will promote such a system. So long as private ownership is accepted, the State will be effectively prevented from asserting a public interest which will preclude the steady flow of capital into the utility field. The cost of service involved is, therefore, one which will be fair to the investor.

The investor's chief interest is the securing of a steady return upon his investment proportionate to the risk assumed. The aim of regulation is to minimize that risk, thus reducing the rate of return, and to see that only the actual investment receives a return. "Valuation" is the determination of the amount of that part of the investment used and useful in the service and represented by plant and equipment.

Valuation for rate-making is a determination of investment, not of worth or value. It asks what sum did the investors put into the property; what did it cost them, not what can they sell it for. The aim is to attract capital at the lowest figure possible, and capital will be attracted as long

as a fair return is allowed upon the actual present investment.

The utility company exercises a public function. It must be satisfied with a limited return upon its investment and must permit what would otherwise be the speculative profits from the business to go to the general public by way of reduced rates and better service. The interest of the public in excess profits over a fair return is as absolute, under the present legal system, as the property rights of the investors. Any method of final valuation which grants the utility a return upon a larger sum than that actually invested takes the property right of the public for the benefit of the utility stockholder just as surely as unreasonable rate-making takes utility property.

The private property voluntarily devoted to the public use by the utility operator, in the eyes of the law, is invested with the understanding that it is being subjected to regulation. The restriction is stated in the common law. It was stated when the utility company was organized and was a part of the law, knowledge of which is required of all. The investor or bondholder who disregarded the legal provision has only his own carelessness or gambling instinct to blame when losses follow his laches. The fact that in reality the investment may have been made with the knowledge that an unreasonable return could be secured only gives incentive to enforce the strict legal rule with more rigor. The law remains the same. Irrespective of what profit the company has actually made, all it was entitled to after undertaking the public service was a reasonable return upon its actual investment — not such return as it could secure in a more hazardous business — not such return as it might gain by putting its money out at interest, or by speculating in real estate; but such return as it could reasonably exact from the public for the utility service rendered.

Any form of final valuation not based directly upon the actual reasonable present investment must inevitably fail

to meet the two principal requirements of regulation. It cannot create a regulatory force which will keep rates near the reasonable cost of production, and it will encourage rather than stamp out speculation.

The aim of rate-making valuation is the determination of the actual unimpaired investment reasonably necessary for the utility service rendered.

VI. *Valuation for Purchase and Sale*

Valuation for purposes of purchase and sale differs essentially from that for rate-making.¹ In determining a value for rate-making purposes the public interest is directly and vitally involved. Such valuation must be based directly upon tangible or intangible property values contributing to the public service. It must be an equitable figure as between the public and the utility. Valuation for purchase and sale, however, does not affect the public interest so vitally. The chief concern of regulation in such cases is to make certain that the property is not so crippled by indebtedness and fixed charges as seriously to handicap service. The pur-

¹ "In valuing utilities for the purpose of condemnation and purchase, many elements must often be taken into account which should not be given any consideration in valuations made for the purpose of rate-making," *Re Manitowoc Water Works Co.*, 7 W.R.C.R. 71, 72. See also *Oshkosh Waterworks Co. v. Railroad Comm.* (Wis. Sup. Ct.) P.U.R. 1915-D-336; see Paper of Comm. Thelen before Nat. Ass'n of Ry. Commissioners, Oct. 30, 1913; *Re Tyrone Electric Co.* (Ill.) P.U.R. 1916-E-708; *In re Stark County Power Co.* (Ill.) P.U.C. No. 6704, 6705; *Re Crownover Tel. Co.* (Neb.) P.U.R. 1915-E-571; *Commercial Club v. Missouri P. Utilities Co.* (Mo.) P.U.R. 1815-C-1017; *Queens Borough Gas & Elec. Co.*, 2 P.S.C. 1st Dist. (N.Y.) 544; *Mayhew v. King's County Lighting Co.*, 2 P.S.C. 1st Dist. (N.Y.) 659; *Fuhrmann v. Cataract Power & Conduit Co.*, 3 P.S.C. 2d Dist. (N.Y.) 656; *Pub. Serv. Gas Co. v. Bd. of P. Util. Comm'rs.* (N.Y. Sup. Ct.) 87 Atl. 651; *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 382; *Omaha v. Omaha Water Co.*, 218 U.S. 180, 54 L. ed. 991, 30 Sup. Ct. 615; *Ames v. Union Pacific Ry. Co.*, 64 Fed. 165; *Spring Valley Water Works v. San Francisco*, 192 Fed. 137; etc. There were, however, early cases in which rate-making and purchase-and-sale value were held identical. *Spring Valley Water Works v. City of San Francisco*, 124 Fed. 574; etc.

chaser and seller are the parties primarily concerned. The seller is interested in securing the full value of his property, on the basis of what it has been worth to him as an income producer. He must base his price upon the revenues he has received in the past and the outlook for the future. The purchaser aims to pay no greater sum than he believes the property will be worth to him as an income producer. He bases his offer on the revenues receivable from the property and his hope for developing the income in the future. Both seller and purchaser are controlled by the physical condition of the property and its effect upon future expenditures for maintenance, and for additions and betterments. Both parties must be governed to a large extent by the rate-making value of the property, since it limits the future return. The price must be fixed at approximately the physical value of the property, for rate regulation will prevent the earning of income on a value in excess of that figure.

Conditions may exist, however, under which the purchaser feels justified in paying an amount in excess of the rate-making value of the property. The previous operation of the property may have been so uneconomical as to leave room for return from increased efficiency. There may be a fair prospect of increasing net return by rendering a better service at reduced rates, thus preventing public criticism of rates until there has been time to recoup the difference between the amount paid and the physical value of the property.¹

The interest of the public in a purchase and sale case is that rates shall not be made excessive to pay a return upon a price above that of the rate-making value, that service shall not be interfered with, and that the company shall not be thrown into financial difficulties by reason of excessive capitalization on which only a small dividend may be earned. The utility cannot, therefore, be allowed in a

¹ See *Re Stark County Tel. Co.*, 5 I.P.U.C. 63; etc.

purchase-and-sale case, to build up a capital account materially in excess of the rate-making value of the property, or to issue securities in excess of that figure. Justice to the stockholder demands that the capital be restricted to approximately the rate basis. Justice to the public demands that the utility be placed on a sound financial basis. A purchase-and-sale price may be authorized in excess of the rate value of the property but the excess must be charged to profit and loss or amortized from income. ..

VII. *The Methods of Valuation*

When valuation was first suggested as a test for the reasonableness of rates, to determine when the exercise of the State police power shaded off into the function of eminent domain, the valuation suggested was the outstanding capitalization. This was natural because dividends were divided upon the basis of capitalization and it was the dividend-earning power which seemed to be in question. The utilities favored such valuation because a majority of them were capitalized in excess of actual investment and any other basis would mean a reduced dividend. It was not, however, a natural stand for the courts, even on an appeal for protection of property rights, and capitalization as a basis for valuation has been consistently rejected from the start.¹

The market value of the outstanding securities was next advocated, but was repudiated as a valuation basis for the same reasons that discredited capitalization, i.e., neither capital stock nor bonds necessarily represented moneys actually invested or funds used in rendering the service, and therefore could not be made the basis for determination of the cost of service. The market value of securities is based in part upon property not devoted to the public service and other elements of value not admissible in a valuation for

¹ 169 U.S. 466; see argument of W. J. Bryan (p. 489) for the contention of the carriers; *Knoxville v. Knoxville Water Co.*, 212 U.S. 1; *Cotting v. Kansas City Stockyards Co.*, 82 Fed. 850; etc.

regulatory purposes. Market value, too, is based largely upon return on the investment and thus upon rates. Rates being the element involved the rate-making value would have to be determined before the market value of the securities to make a reduction of rates possible — market value involves existing rates — rate-making value is concerned with reasonable rates.

The market value of the securities is an unacceptable valuation basis, too, because it is readily susceptible to manipulation. It is inherently unfitted for regulatory purposes because it would prevent the elimination of speculation.

The early decisions, realizing the defects of capitalization and market value of securities, seemed to assume that original cost must be accepted as the measure of value for regulatory purposes. For this reason, they all sound a warning against confusing cost and book value. Original cost must not be misdirected to include the fallacies of the discarded theories. The public needs protection from a utility which has become so powerful that regulation has been rendered necessary. Original cost, or actual capital investment, the Court hastens to point out, cannot be determined from the books of the company alone. To base original cost solely on book value would be to read into it all the fallacies of valuation based on capitalization. It would permit the utility company to direct its own regulation and wholly destroy the value of government control. An estimate of the original cost, the Court admits, however, may be made from the company's records. The inventory may be based upon the facts there shown. But the figures thus gained cannot be accepted as the sole basis for a final valuation. Actual practice showed that the company's book entries of expenditures must be checked to render the estimate allowed by the Court a safe one for the public. To make such a check an inventory of the property on some basis other than the company's record was required. To verify that record with

current prices at the time of construction, to check back on every stage of the company's development, seemed to render the check a more tedious and complicated process than the inventory itself. A reproduction-cost appraisal was suggested as a less troublesome check.¹ The courts accepted the suggestion, and the new appraisal thus introduced has been retained for other reasons.

Two forms of appraisal valuation have been developed, original cost to date and reproduction cost. Detailed consideration of their application is reserved for the following chapter.

VIII. *Summary*

The conclusion naturally reached is that the term "fair value," if used without qualification as to its application, is practically impossible of specific definition. Fair value for rate-making purposes differs from that for purchase and sale, and both differ from strict exchange value. No form of value for regulatory purposes is the exact equivalent of economic or exchange value. Value for condemnation proceedings is the nearest approach to that figure. Exchange value considers only private interests. Regulatory valuation involves the public interest. It is in the nature of an accounting between the utility and the public and excludes the public interest in the property which commercial or economic value includes. Regulation limits or depreciates exchange value. Valuation as a basis for purchase-and-sale cases permits of the consideration of capitalized earnings, and otherwise resembles exchange value, but it is materially restricted by the necessity of keeping the purchase price near the fair value for rate-making. Rate valuation exercises an indirect control over all other phases of regulation. It is, therefore, the fair value for rate-making purposes with which we are chiefly concerned.

The aim of rate regulation is to determine a rate base

¹ See *infra*, Chapter V, Sec. III.

which will permit the fixing of rates which will not exceed the value of the service and yet be high enough to attract private capital to the utility field and fall within the limitation placed upon the police power by the due process clause of the Fourteenth Amendment. The reasonable cost of the service ordinarily affords such a base. Rate-making valuation is a part of cost-of-service determination. It seeks to establish the investment upon which a return must be earned. It deals with investment and cost, not with value as that term is commonly understood. It deals with normal or reasonable, not actual investment.

Two principal methods of estimating reasonable investment have been developed. They are the original-cost and the reproduction-cost appraisal.

CHAPTER V

VALUATION METHODS

I. *The Inventory*

It is the purpose of valuation to fix a basis for rate-making, sale price, purchase price, taxation, reorganization, and security issues — a basis which will protect the public interest, induce capital to enter the utility field, and keep regulation within the limits fixed by the Fourteenth Amendment. How that basis is to be found remains to be considered.

There are three distinct steps in valuation — the making of the inventory, the determination of elements of value properly considered in view of the specific purpose of the appraisal, and the final determination of value. Much confusion in valuation has resulted from unwillingness to recognize this division. The engineer, all-sufficient unto himself, selects the items he will emphasize, makes his inventory, adds a finding of value, and submits the two as one, supported by a brief under the guise of a report. Writers discuss inventory, appraisal, and valuation as synonymous. And the courts have fallen into the same error.

The first, and only the first, step is the sphere of the engineer and accountant. The second step demands the knowledge of the economist, and the third is the province of commission and court.

The inventory lists in detail the tangible and intangible property of the utility; the appraisal assigns a unit value to each article listed. That value is determined by the theory of appraisal irrespective of its effect upon the final valuation or fair value for the specific purpose of the case. Next the average life, age, and condition of each item is stated to show the depreciated value. Here the appraisal technically stops, but it is always accompanied by a history of the

property. An accurate account of the organization, financing, and development of the corporation is essential to a fair inventory of intangible property.

The total of the values shown by the inventory and appraisal, irrespective of the theory of valuation used, does not fix the value of the property, even though the property be listed at its depreciated worth. The appraisal shows all existing values regardless of their admissibility for rate or sale purposes. It includes property not used or useful in rendering the public service, expenditures injudiciously made, and numerous other factors which cannot always be considered in the final valuation. Its total is a figure which may be just neither to the public nor to the company.

The appraisal is not concerned with fair value nor worth of service. It is the engineer's or accountant's statement of the exact present condition, character, and amount of the tangible and intangible property, the actual or estimated original or reproduction cost of each item thereof. It should follow consistently the form of valuation selected, or draw separate inventories upon each basis if more than one is employed. It should represent the appraiser's best estimate of the value of each item, without regard to the purpose of the valuation.

The work of the economist begins when the appraisal is completed. It is his duty to consider the items of value appraised and determine which are to be considered for the particular purposes of the proceeding. That decision, once rendered, formulates a rule applicable in all similar cases. Any element of value properly considered in one rate case is relevant in any other, irrespective of whether it is allowed as a part of the final valuation in the particular case. Any element of value properly held irrelevant in one rate case should not receive consideration in another. The statement that "fair value cannot be found by formula"¹ refers ex-

¹ *Springfield v. Springfield G. & E. Co.*, I.P.U.C. No. 2138; *Lincoln v. Lincoln Water & Light Co.*, I.P.U.C. No. 2496; P.U.R. 1917-B-1; *In re Berlin Elec. Light Co.*, 3 N.H. P.S.C. 174; etc.

clusively to the final valuation. It does not imply that fixed rules cannot be formulated relative to the elements of value properly considered or excluded for rate or sale purposes. It merely means that these rules, though they determine what general elements of value are relevant for each type of valuation, do not assure such items of consideration in the final valuation in each case. This is a limitation true of all exclusion rules of evidence. It is true in valuation cases, because, for example, though engineering and legal expenses are proper elements of value in the inventory, they may be excluded from the final valuation because they were never incurred, because improperly incurred or incorrectly inventoried. Some elements of value, on the other hand, are not properly considered in any rate case. Property not used or useful in the public service, excessive franchise values, etc., must always be excluded.

The determination of which of the elements inventoried by the appraiser and branded admissible by economic rule shall be taken into consideration in the particular case is the work of the commission and court. That decision constitutes the valuation of the property.

Valuation can be clearly understood only by considering the two principal theories of valuation separately, and keeping in mind that these theories are used in two wholly distinct and unconnected ways, (1) in the valuation of the separate items of the inventory, (2) as the theory of final valuation. In actual practice an appraisal based on only one of these theories has seldom determined the final valuation, unless the peculiar circumstances of the particular case made such action unavoidable. The general rule has been to accept appraisals based on original and reproduction cost respectively, made without regard to their effect upon the final valuation; to determine from them the more equitable cost under the circumstances, to eliminate the elements of value not relevant in the special case, and then depreciate the sum thus decided upon.

II. *The Original-Cost Theory*

The first theory of value favorably considered by the courts was the original cost of the property. Like most valuation terms "original cost" has been employed with innumerable meanings, being twisted to suit the convenience of the person making the appraisal, of the attorney, and unfortunately even of the courts. This jumbling of words has resulted in the adoption of substitute terms and the drawing of unnecessary technical distinctions. The confusion is inexcusable, and bears every mark of a deliberate attempt by designing utility representatives to render the original-cost theory so indefinite and ambiguous that its application must produce unreasonable results, and be frowned upon by the courts.¹

Original cost, as a basis for final valuation, has been distinguished from both actual cost and book value. The three terms would be synonymous under a proper system of accounting. None of them are fitted to describe what original cost means. Confusion has resulted, also, from the use of the term to indicate either actual original investment alone, or such investment plus betterments properly chargeable to the capital account.

The narrow use of the term was forced upon the courts by short-sighted public representatives in the early cases in an attempt to exclude all betterments. The necessity of attracting private capital for future improvements, and the certainty of court intervention on constitutional grounds, were overlooked. Utility attorneys, knowing that such an interpretation would destroy original cost, readily assented to it, and hastened to point out that, as thus used, it was an improper basis even for an appraisal.

A careful consideration of the literature of valuation, the

¹ This phase of the question is illustrated by the voluminous, and ludicrous, if serious, brief filed for the carriers before the Interstate Commerce Commission, August 1, 1917, in the valuation of the Texas Midland R.R. Co.

briefs of attorneys, the reports of engineers, and court opinions leads to the conclusion that original cost is now universally construed as original cost to date. It includes all expenditures made in the original construction of the plant and all additions and betterments chargeable to the capital account under recognized accounting methods. It excludes all expenditures for replacements made necessary by depreciation, obsolescence, or inadequacy. It corresponds to neither actual cost nor book value. It is the original investment to date, using the word "original" to exclude replacements.

Any theory of original cost which failed to consider additions and betterments would render a valuation for rate-making powerless to serve the purpose for which it was undertaken. The rate-basis valuation is made to determine the cost of service irrespective of its value. The valuation must be fair to the public, but public interests are ordinarily protected by basing rates on reasonable cost of service, and where such is not the case they must depend upon the wholly distinct limitation, worth of service. If rates must be fixed below the cost of service to keep them within the value of the service, the action must be taken in spite of the valuation, not by alteration of it. The questions valuation deals with are, What is the investment upon which a return must be allowed in order to attract capital? and, What is the extent of the property rights protected by the Fourteenth Amendment? The exclusion of expenditures for reasonable additions and betterments would take private property without compensation and drive capital from the utility field.

The original cost to date indicates the property to be included in the inventory and the unit value; but an appraisal made on that basis does not necessarily represent the final value of the property. The inventory may include items not used or useful in the public service, improper expenditures, etc., and irrespective of the appraisal basis

the property must be depreciated to arrive at present value.¹

The California Commission defines original cost as the actual expenditures for operative property in cash or equivalent in terms of cash, chargeable to capital in accordance with the Interstate Commerce Commission's classification as of the date of valuation.²

The term is used by the Public Utilities Commission of Illinois to mean the actual expenditures, in cash (or its equivalent in terms of cash), made by the utility for used and useful property which is properly chargeable to capital account and which is embraced in an inventory; or, in the absence of records and books of accounts showing the actual expenditures, then, the estimated cost of the property as of the sundry dates of the installations of the various property items is considered the original cost thereof.³

III. *The Reproduction-Cost Theory*

A second theory of valuation, reproduction cost, made its appearance in the Supreme Court decision in *Reagan v. The Farmers' Loan and Trust Company*,⁴ where the Court

¹ The term "original cost" has not been defined by the Federal Supreme Court and has seldom been explained by the lower courts. Commissioner Halford Erickson, of Wisconsin, in the *Utilities Magazine*, vol. 1, No. 3, p. 13, says: "By original cost in this connection it seems to me should be understood the cost at which the existing property used by public utilities in rendering service was acquired. By cost of reproduction is meant the cost of reproducing the existing property under prevailing conditions. The original cost of the existing property should be shown by the books and records of the utilities providing these have been properly kept and are still in existence. When the books have not been so kept or are not available, the original cost as thus outlined may be determined very much in the same manner as that in which the cost of reproduction is found." Quoted with approval in *City of Springfield v. Springfield Gas and Electric Co. (Ill.)* P.U.R. 1916-C-281; and *City of Lincoln v. Lincoln Water and Light Co. (Ill.)* P.U.R. 1917-B-1.

² In re *Sugar Pine R.R. Co. (Cal.)* P.U.R. 1915-A-728; see also *Annual Rept. Cal. R.R. Comm.* 1915-16.

³ *Third Annual Rep. Illinois Public Utilities Comm.*, p. 93.

⁴ 154 U.S. 362, 14 Sup. Ct. 180, 38 L. ed. 1014.

considered the showing that the railroad property under consideration had cost \$40,000,000 and could not be replaced for less than \$25,000,000, and pointed out that because of extravagance, waste in management, enormous salaries, and because "the construction may have been at a time when material and labor were at the highest price, 'actual cost' may have exceeded the 'present value.' "

The reference to reproduction cost in this decision and "present cost of construction" in the Ames Case was seized upon by utility attorneys and developed in this or that direction as the advocate thought he could best serve his client. The Court itself did not define the terms used. The attempt to define them since have been many and varied. They have developed along three general lines: (1) the cost of reproducing a plant, similar in all essentials to the existing plant, under present conditions; (2) the cost of reproducing a similar plant at present prices, under conditions prevailing at the time of original construction; (3) the cost of constructing a substitute plant capable of performing the same service. "Cost of reproduction new less depreciation," sometimes spoken of as a fourth form of the theory, is but the application of depreciation rules to the inventory.

IV. Development of the Reproduction Theory

The determination of what the term "reproduction cost" means, requires consideration of the development of the theory and an attempt to fix the weight of authority as between the three forms advocated.

Following the decision in *Smyth v. Ames* there was a marked lull in valuation. When the reproduction theory reëntered the arena in 1909, it came full grown, not the undefined infant suggested by Justice Harlan in 1898. The theory had been developed outside the Supreme Court, we may add, without its sanction.

Even prior to the memorable Ames Case the lower courts

had dealt with the theory. In 1896 Judge Woolson, in the case of *Capital City Gaslight Company v. City of Des Moines*,¹ in determining the reasonableness of gas rates based his estimate upon the estimated cost of an equally efficient plant. In 1897 the Supreme Court of Minnesota, in the case of *Steenerson v. Great Northern Railway Company*,² in considering the reasonableness of a rate reduction made by the Minnesota Railroad and Warehouse Commission held that as values had declined reproduction cost, not original cost, must control.

The case emphasizes the true origin of the theory. It was founded in the over-zealous efforts of attorneys for the State. It was forced upon the Court in an effort to lower value. So far as the origin of the theory is concerned the utilities have been guiltless. Their fault lies in their misconstruction and misapplication of the theory.

In 1902, in the case of *Kennebec Water District v. City of Waterville*,³ discussing a valuation for purchase purposes not rate-making the Maine Supreme Court interpreted reproduction cost to mean the replacing of the present system by one substantially like it, in its present condition and with its present efficiency. Six years later the Federal Court held, in *Spring Valley Water Company v. San Francisco*,⁴ that the cost of a substitute system might be considered,

¹ 72 Fed. 829.

² 69 Minn. 353, 72 N.W. 713. The Court said: "Counsel for the railway company dwell much upon the original cost. . . . No guaranty was ever given by the State to the old road that the price of materials and the cost of construction would not decline, or that capital invested in railroads would not be subject to like vicissitudes as capital invested in other enterprises. Modern improvements and other causes have continued to reduce the cost of construction of all kinds of new plants, and to reduce the value of old plants, or render them wholly worthless, and the State did not guarantee that those causes should not in like manner affect the capital invested in railroads. Then the material question is not what the railroad cost originally, but what it would now cost to reproduce it."

³ 97 Me. 185, 54 Atl. 6; see also *Brunswick & T. Water District v. Maine Water Co.*, 99 Me. 371 (1904).

⁴ 165 Fed. 667.

but could not be made the controlling element in the valuation.

In 1909 John W. Alvord stated his theory in detail before the American Water Works Association. We feel justified in quoting from it at length because it is largely responsible for the utility concept of reproduction cost. His statements were in part:

In estimating the cost of reproducing a plant it is obviously important to consider the reproduction as taking place in a way that is humanly possible. Now it is not humanly possible to construct a plant in the past, or in one day, or by the substitution of hindsight for foresight; therefore, if we are to avoid flights of constructive fancy, we are compelled to consider the reproduction as taking place in the near future in reasonable and workable periods of time, and without special foreknowledge other than that gained from experience with similar construction and familiarity with costs in the near past. To do other than this will not be "reproducing."

A conceptional starting plant which is in process of being estimated must be made to pass through all the preliminary phases of mental origination as well as physical construction; it must consider the time and cost necessary to devise, conceive, design, negotiate, administer, and direct, as well as the labor cost of digging and building, and the duplication which we try to imagine involves the re-creation of many subordinate structures, appliances, and much machinery which will have been removed or will have ceased to exist. . . .

The conceptional starting plant must, of course, finally, precisely accord in form, dimension, and extent with the existing or going plant. . . .

The . . . plant should . . . deal with all difficulties known to be originally encountered in constructing the existing or going plant, notwithstanding such difficulties might now be easily modified or eliminated by a forewarned intelligence.

The value . . . should be computed upon such prices of labor and material as it would seem safe for a prudent man to commit himself to and for such reasonable period in the near future, as experience shows will properly be required for construction. . . .

The method of valuing . . . will necessarily include all the appreciations in value which logically and properly ought to be credited to the existing or going plant, by reason of its age. . . .

If appreciations are thus made necessary in the process of du-

plication, it is also true that on the completion of the conceptional starting plant, it must be reduced in value by the measure in which the existing or going plant has depreciated through age, wear and tear, by reason of new inventions, changes in demand, growth of ideas, and other fluctuating conditions. The time element here is of vital importance.

Mr. Alvord further explained his conception of the reproduction cost theory in a paper entitled, "Principles of Public-Utility Valuation," read before a meeting of the American Society of Civil Engineers, November 18, 1914, thus:

. . . Having familiarized ourselves with the existing property which is to be valued, we must in imagination, as a prolonged conceptual process, retrace, step by step, every feature of the procedure that would have to be taken if that property were completely wiped out, and we were responsible for the task of entirely rebuilding it in a reasonable length of time and in a manner which is humanly possible. Should we unconsciously omit one important step necessary to that rebuilding, we will fail to reach the full cost. Being in possession of retrospect, we are constantly subject to the temptation to substitute an easy and virtuous hindsight for that real lack of foresight which would be our condition in actual life and under ordinary conditions. If we do full justice to the procedure, we must trace two lines of human endeavor, that is, the mental labor as well as the physical labor which produced the result before us. Mental endeavor will include the development of the project and the preliminary steps of promotion. This must include the necessary time and pains that would naturally be taken to see that the project is practical, the time and attention necessary to negotiate the franchise, investigate the methods of service, and estimate the preliminary work. We must at every step of the way outline to ourselves the necessary lengths of interlapsing time to do all these things, as well as the amount of labor to design, contract for, and actually build each structure. Much of our cost will be entirely dependent on the length of time we assume for these practical operations. It is quite certain that the most trained imagination, practically acquainted with similar construction, will not always entirely succeed in redeveloping every detail involving expense in such a procedure. . . .¹

¹ 79 Trans. A.S.C.E. 144. Quoted as the basis of a valuation submitted by Mr. Anderson in *Lincoln v. Lincoln Water & Light Co.*, I.P.U.C. No. 2496.

These explanations of Mr. Alvord's theory fairly represent the reproduction method which the utilities, under guise of compliance with *Smyth v. Ames*, have persistently tried to make the predominant element in valuation,¹ and which they now advocate before the Interstate Commerce Commission under the Federal Valuation Act.²

The reproduction theory of the utilities is one developed from the versatile mind of well-paid utility advocates. It has received consideration, but has not been generally accepted by regulatory bodies. How widely it differs from the simple statement of *Smyth v. Ames*, that "present as compared with original cost of construction" must be considered, is apparent at a glance. The words of the *Ames Case* contain no command that the existing plant be theoretically wiped from existence, or that the lessons learned in its construction be forgotten. No direction is given that the plant constructed in the present be identical with that in existence other than in the service it renders. On the contrary, any rational construction of the term "present cost of construction" would assume it to mean construction with pres-

¹ Morris Knowles, "Relation of Reproduction Cost to Fair Value," *The Utilities Magazine*, vol. 1, no. 3, p. 17.

² The synopsis of their brief filed preparatory to oral argument before the Commission on September 30 and October 1 and 2, 1915, states their theory thus: "In determining the cost of reproduction new, reference shall be had to the conditions as they exist at valuation date, but the historical construction of the property must be taken into consideration whenever a rational engineering programme for reproduction would so warrant or require. Conditions existing on the valuation date as to population, business capacity, and productiveness and property values in the territory served by the carrier are to be taken. The same quantities and classes of grading materials which were originally obtained on the right of way will be deemed to be obtainable in the same places, and the present cost of moving the same will be ascertained. The cost of acquiring other necessary materials from the most available sources on valuation date will be ascertained. . . . The property of the carrier to be reproduced is to be considered as non-existent. The general conditions outside of the right of way and terminal lands of the carrier shall be considered to be as of date of valuations." The same views are expressed in all the later briefs.

ent knowledge of facts and condition at present prices and in accord with present standards.

Recognizing these facts the representatives of the public have refused to accept the theory submitted by the utilities and demanded that reproduction cost be figured on the basis of a substitute plant capable of rendering substantially similar service.¹

V. The Purpose of the Reproduction-Cost Appraisal

The aim of the substitute-plant theory is to give to the public the advantage of savings from increased economy under present knowledge and present conditions. Whether or not the doctrine is justifiable depends upon what the appraiser seeks to accomplish. The reproduction theory must find its justification in the purposes of valuation. It must be fair to the public and approximate the investment upon which the utility is reasonably entitled to earn a return. It must produce a figure which will attract capital without being exorbitant. The nearer it comes to the actual justifiable capital investment the more fully it will promote the aims of valuation. If the appraiser seeks to determine such a value he must base his calculations upon the existing not a substitute plant. If he views reproduction cost as a check upon original cost, the substitute-plant idea must be discarded for original cost values of the existing equipment.

If the appraiser conceives of reproduction cost as a curb

¹ Whitten, *Valuation of Public Service Corporation*, p. 73, sec. 75; *Capital City Gaslight Co. v. City of Des Moines*, 72 Fed. 829; *Spring Valley Water Co. v. San Francisco*, 165 Fed. 667; Statement of C. L. Gorey before the Pacific Coast Gas Association at its nineteenth annual meeting, *American Gas Light Journal*, Oct. 23, 1911, p. 260. See also *Murry v. Public Utilities Comm.*, 150 Pac. 47 P.U.R. 1915-F-436, wherein the Idaho Supreme Court said: "This court is of the opinion that the rule of cost of reproduction less depreciation, adopted by the Commission, is the correct general rule or principle to be applied in this class of cases. However, we believe that in ascertaining values in this way the worth of a new plant of equal capacity, efficiency, and durability, with proper discount for defects in the old, and the actual depreciation for use, should be the measure of value, rather than the cost of exact duplication."

upon the utility, allowing it to collect rates upon no greater sum than the public would have to pay for a substitute plant, the theory would be acceptable if the premises were sound. But such an appraisal idea is not tenable. It confuses value of property with value of service. It seeks to make the appraisal perform the function of the final valuation. As a basis for determining the worth of the service such a theory would work admirably. It would conform more closely to the true economic idea of price. But as a property-valuation theory it is inexpedient. It injects into the attempt to determine cost of service a wholly foreign element, value of service. It works in the same vicious circle that market value as a rate base does. It would nullify, to a large extent, the attempt to exclude speculation and put the utility on a conservative business basis. It would force into the business unreasonable risks necessitating a larger rate of return and minimizing the possibility of regulating for the general good. It would diminish the certainty and regularity of income upon which the rate of return is fixed and thus limit rate reduction. It would, in brief, inject into the artificial economic system created for utilities a part of the old economic rules discarded as inapplicable to such undertakings. It would create a conglomerate regulatory system one part of which was not in accord with the rest.

A compromise theory of reproduction cost has been developed with the evident thought of forcing the reproduction theory to approximate more closely the original or actual cost basis upon which it operates as a check.¹ This doctrine involves the reproduction of the identical prop-

¹ Report of St. Louis Public Service Commission on Electric Light and Power Rates, Feb. 17, 1911; Argument of H. P. Gillette before American Society of Civil Engineers, 73 Transactions, A.S.C.E. p. 382; *Lake Forest v. Lake Forest Water Co.*, I.P.U.C. Nos. 2343 and 2275, P.U.R. 1915-D-1008; *Monahan v. Pacific Gas & Elec. Co. (Cal.)* P.U.R. 1916-B-609; *Re Portland R. Light & Power Co. (Or.)* P.U.R. 1916-D-976, where reproduction cost was limited to original investment and original cost applied to betterments and additions.

erty under original conditions, but at present prices. As the theory differs from the present conception of original cost only in that present, in place of original, prices are used in the valuation, it needs little consideration.

A fourth theory of reproduction cost recently received with favor by many of the commissions is based upon normal conditions and prices. It averages unit prices over a period of years in the immediate past, and assumes normal construction conditions.¹ It endeavors to eliminate those elements of cost appearing in the strict reproduction estimate which, because equipment was unsuited or prices were abnormal, would cause the reproduction estimate to reflect results either abnormally high or low. The normal cost estimate is not governed by rigid adherence to the inventory, though speculation and conjecture are not permitted. Abnormal construction methods which might be necessary in a strict reproduction estimate on account of conditions which would not usually prevail are eliminated in the normal cost estimate. It is based upon modern equipment and present normal market, labor, and physical conditions. It has the advantage of excluding unusual prices, but increases rather than decreases the dependency upon the individual judgment of the appraiser.

VI. *Attempt to Discredit Original Cost*

The utility companies early recognized that original cost did not work to their advantage. It resembled publicity too closely. It disclosed too many utility family skeletons. The attention of the companies, therefore, was turned to reproduction cost. In it they readily recognized an opportunity to turn defeat into victory.

A rigid campaign was instituted to discredit original cost. The most vulnerable point of attack was the difficulty of

¹ *Piercy v. Citizens G., Elec. & H. Co. (Ill.)* I.P.U.C. No. 4896, March 18, 1918. Normal cost has been accepted as an appraisal method and universally used in Illinois.

determining such cost. Propaganda pictured original cost as wholly dependent upon a complete record of the utility's growth with explicit entry of all purchases and expenditures. The value of such reasoning was enhanced by the fact that it lay within the power of the utility to multiply the difficulty without serious danger of detection. Many records probably had been lost or destroyed. Some companies found it advantageous not to keep past records. Undoubtedly records were intentionally done away with. There certainly was no vigorous effort made by many of the companies to produce their books.

The difficulty of applying the original-cost theory seems to have been systematically increased under advice of utility attorneys, and has unquestionably been enormously overestimated by them.¹

When any concerted attempt has been made to put the theory into operation, no greater difficulty has been encountered than in applying the reproduction-cost method.² The cases in which commissions have found themselves really unable to determine original cost, as the term is now understood, have been, almost without exception, those in which an original cost appraisal would have either produced a final valuation much smaller than that shown by the reproduction-cost appraisal, or disclosed facts which the company would seriously object to proving against itself.

Mr. Halford Erickson, formerly of the Wisconsin Railroad Commission, contends ³ that "the original cost of the

¹ Brief of C. E. Smith in *Lincoln v. Lincoln Water & Light Co.*, I.P.U.C. No. 2406, p. 65; Brief of Wilson, Warren & Child in *Springfield G. & E. Co.*, I.P.U.C. No. 2138, p. 19; Argument of the carriers before the committee of the Senate considering the Federal Valuation bill. See Senate Report No. 1290 of the 62d Congress, p. 54; Remarks of President Hadley before the Senate Committee; Report 3d Session 62d Congress, p. 236; *Marquis v. Polk County Tel. Co. (Neb.)* P.U.R. 1915-C-140; Remarks of C. A. Prouty before the Nat'l Ass'n of Ry. Commissioners, Nov. 18, 1914.

² See in re *Central Pac. R.R. Co. (Cal.)* P.U.R. 1916-B-845.

³ *The Utilities Magazine*, vol. 1, no. 3, p. 113.

existing property can be had with even greater accuracy than the cost of reproduction." In Washington, where the question was carefully considered by the State, the original cost of all but five per cent of the entire railway mileage in the State was obtained.¹ And a complete set of the original contracts covering practically every mile of railroad comprising the Santa Fé System was admitted to be in existence by the late Mr. Hurley, General Manager of that road.²

The campaign to discredit original cost failed because the propaganda could not obscure the fact that such valuation is not dependent upon a complete record, but may be estimated just as reproduction cost is calculated, and with as great or even greater accuracy. Original cost can be figured upon the same inventory as reproduction cost by merely substituting prices of material and labor, which were current at the time the items inventoried were put into the plant, for the present or normal price used in the reproduction cost appraisal. The original prices may be secured in part from the records of the firm and in part from the market quotations of the period.

To bolster up their attacks the utilities sought to show that by accepting reproduction cost as a check, the Court was discrediting original cost and proclaiming the former the principal basis of valuation.

The ludicrous argument constantly reappears in utility briefs that the phrase, "the present as compared with the original cost of construction," was adopted by the Court in *Smyth v. Ames* in lieu of "the original cost of construction compared with the cost of reproduction new," the innuendo being that though the original-cost appraisal had been retained for purposes of comparison, original-cost valuation had been rejected in favor of a reproduction theory of valuation.

¹ 2d and 3d Annual Report, Washington R.R. Commission, p. 127.

² Argument of A. E. Helm of Kansas Public Utilities Comm. before the Interstate Commerce Comm. Jan. 26, 1916.

The language of the Court was:

We hold . . . that the basis . . . must be the fair value of the property being used by it for the convenience of the public, and in order to ascertain that value, *the original cost of construction*, the amount expended in permanent improvements, the amount and market value of its bonds and stocks, *the present as compared with the original cost of construction*.

The terms used by the Court here seem unusually clear. Fair value is to be determined. It is neither original cost nor reproduction cost; both must be considered. The original cost of construction to date must be ascertained, the amount and value of outstanding securities determined, and the present cost of construction estimated. From all these and perhaps many more elements fair value is to be fixed.

The instruction thus given, though far from being as explicit as could be desired, has been literally followed by most of the courts and commissions.¹ The final valuations reached in a few decisions have been based almost entirely upon original cost.² Other cases deviating in the opposite direction have seemed to consider only reproduction cost in reaching the final valuation.³ No court, however, it is be-

¹ Western Advance Rate Case 20, I.C.C. 307; In re Berlin El. Light Co. 3 N.H. P.S.C. 174; Springfield v. Springfield Gas & Elec. Co., I.P.U.C. No. 2138; Lincoln v. Lincoln Water and Light Co., I.P.U.C. No. 2496; Buffalo Gas Co. v. Buffalo, 3 P.S.C. 2d Dist. (N.Y.) 553; Commercial Club v. Citizens Gas & L. Co. (Ind.) P.U.R. 1916-E-1; Bogart v. Wisconsin Tel. Co. (Wis.) P.U.R. 1916-C-1020; Re Dunham (Mo.) P.U.R. 1916-E-544; etc. See also Ames v. Union Pacific Railway Co., 64 Fed. 165; Appleton v. Appleton Water Works Co., 5 W.R.C.R. 215; Report of St. Louis Public Service Commission on United Railway Company, 1912.

² San Diego Water Co. v. San Diego, 118 Cal. 556, 50 Pac. 633; Re Cripple Creek Water Co. (Cal.) P.U.R. 1916-C-788; Public Service Comm. v. Pacific Tel. & Telg. Co. (Wash.) P.U.R. 1916-D-947; Butler v. Lewiston A. & S.W. St. R.R. Co. (Mo.) P.U.R. 1916-D-25; etc. See also Report of St. Louis Public Service Comm. on Southwestern Tel. & Telg. Co. 1913, Pub. Serv. Comm. of New Hampshire, 1912, p. 302.

³ Re San José Water Co. (Cal.) P.U.R. 1915-E-706; Re Terminal Taxicab Co. (D.C.) P.U.R. 1915-B-546; In re Bronx Gas & Elec. Co. (N.Y.) P.U.R. 1916-A-440; Steenerson v. Great Northern Ry. Co., 69 Minn. 353, 72 N.W. 713; Shepard v. Northern Pacific Ry. Co., 184 Fed. 765. (Re-

lieved has taken the definite stand that an inventory based on the cost of reproduction is to be accepted as the sole guide in valuation for rate-making purposes.

The argument upon which the contention for reproduction cost as the sole basis of final valuation is founded, has been clearly stated in one or two of the lower court cases. Judge Hough, in *Consolidated Gas Company v. Willcox*,¹ said:

It is impossible to observe this continued use of the present tense in these decisions of the highest court without feeling that the actual or reproductive value at the time of inquiry is the first and most important figure to be ascertained.

And in *Louisville and Nashville R.R. Co. v. Railroad Commission*,² it was said:

And in every case, after finding the original cost, when possible to be done, the question would still have to be solved as to whether such original cost is the same as the present value, which would involve the determination of the present value for such comparison independent of original cost, and in no other or better way than on reproduction values.

The fundamental thought is that present value must mean reproduction cost. The argument is unsound. It begs the question. It assumes that reproduction cost and present value coincide, and using that assumption (which is the very point to be proved) as a major premise the argument proceeds to the conclusion it assumed at the start. The argument may be stated thus: "All present value is determined by reproduction cost. The Supreme Court has said we must determine present value. Therefore, we must determine reproduction cost."

A very meager consideration of the Supreme Court cases demonstrates that no such general proposition as has been assumed can be gleaned from them. On the contrary, they

versed on this point by the Federal Supreme Court in the *Minnesota Rate Cases*.)

¹ 157 Fed. 854.

² 196 Fed. 800.

have held distinctly that reproduction cost and present value are not synonymous terms.

The unmistakable trend of the decisions since 1914 has been away from accepting any theory of reproduction cost as a sole or predominant element in valuation and toward recognizing it as a check upon and supplement to original or actual cost. An attempt is undeniably being made to meet the utility suggestion of reproduction cost as the principal or sole basis for final valuation, by forcing that theory of valuation into the background and relying almost wholly upon actual investment.

VII. *Defects of Strained Reproduction Cost*

The chief objection to the reproduction theory, from the public standpoint, is that a valuation based thereon invariably carries conjectural charges for overhead expenses in excess of those actually paid and thus capitalizes against the public sums which were never expended, from which the public has derived no benefit, and which cannot be said to add to the value of the plant, regardless of the theory of appraisal adopted.¹

The reproduction theory under the constantly rising costs capitalizes wages and cost of material at prices far above those actually paid, and gives a return to the stockholder at the expense of the public on an imaginary investment which he never made. It values visionary capital which has in no way added to the business or made it better fitted to serve the public.

The same criticism applies to the inclusion in the reproduction-cost inventory of the theoretical cost of cutting

¹ *Lincoln v. Lincoln W. & L. Co.*, (Ill.) P.U.R. 1917-B-1. See also *Springfield v. Springfield G. & E. Co.* (Ill.) P.U.R. 1916-C-281. "It is an amusing, although regrettable, commentary on the imperfection of regulation, to note that the fair value rule, controlled by the cost of reproduction less depreciation method is to-day perpetrating the identical evils which its creation was designed to prevent." *Re Indianapolis Water Co.* (Ind.) P.U.R. 1919-A-448, 465.

pavements, which in reality were laid long after the conduits were placed, and which never have been cut, and if cut in the future will be paid for from sources other than the capital account. The capitalization of land values never paid by the investors and which never will have to be paid is another disputed phase of the reproduction theory. It produces a fictitious property interest not protected by the due-process clause because it does not contribute to the use taken. It is in short but a skillfully disguised stock-watering scheme. Honestly made and carefully used, however, the modified reproduction-cost appraisal is an aid in determining final value.

Most of these defects which make the reproduction-cost theory unavailable as a sole basis for valuation are treated in detail in later chapters.

VIII. *The Actual-Investment Theory*

The realization of the undesirable results attending the application of the reproduction-cost theory to rate-making valuation has done much to encourage an attempt to determine the true basis of valuation. It is difficult to understand the influence the reproduction theory exerted on courts and commissions unless it be attributed to the proverbial inability of lawyers to grasp accounting theories. Rate valuation is but one step in cost accounting. It corresponds to the factory inventory. Reasonableness of rates is the issue. Cost of producing the service is the basis for deciding that issue. The principles involved in this cost-finding differ in no material aspect from those involved in the determination of costs in the general industrial world. Investment, or original cost, has always been the basis of industrial cost-finding.¹

¹ "The thing that is of importance for the business is what its equipment actually cost, not what such equipment would have cost under other conditions. If actual costs are recorded, with the date of occurrence, the cost of duplication can always be figured by a comparison of prices paid with current prices; so the argument for keeping cost of

The process is most aptly stated by Professor W. M. Cole¹ thus:

If we wish to know the justice of the dividends of a corporation, what do we need to know? Three things: what the investors have put in; what risks they have taken; what they have taken out. Nothing else can be of any importance in settling our question.

In regulation, valuation seeks to determine the first of these elements, the rate of return considers the second, and from these two the proper third is fixed. The sole difference between cost-finding in regulation and in the factory is that rates are based upon reasonable costs in one and actual costs in the other.

The "reproduction-cost-new" theory of appraisal has no place in a cost system, when actual cost figures are available. It is of value when original cost cannot be readily ascertained; but the value it possesses is a reflected one. Reproduction cost itself is not an element in any cost of production figure. Its only possible use is as a basis for estimating actual cost. The rate-making valuation must be based upon the actual, reasonable cost or the most accurate estimate of that cost. Realization of this fact has forced the reproduction theory into the background in rate cases.

The movement favoring actual investment was given momentum by the discovery that under the strained constructions placed upon the reproduction theory by utility representatives that theory was becoming a most serious menace. Under the sanction of the courts, utilities were seeking over-capitalized values beyond the dream of the most ardent promoters.

One stronghold after another of the utility-made reproduction theory was attacked and successfully carried. The duplication on the books entirely disappears . . . to register on the books a capitalization based on earning capacity is not only to register an unnecessary figure but to bury the actual cost of the assets. . . . To summarize, no theoretical accounting aims support any view of capitalization other than cost." Cole, *Accounts; Their Construction and Interpretation*, p. 163.

¹ *Accounts; Their Construction and Interpretation*, p. 168. .

elimination of cost of paving not actually cut, the adoption of rational methods in the determination of land values, the consideration of piecemeal construction, the use of average unit prices, the adoption of reconstruction under original conditions, the refusal to allow going value as a separate element, all mark stages in the revolt against overcapitalization by way of reproduction cost.

The attitude of the commissions and courts to-day is stated in the decision in Grafton County Electric Light and Power Company¹ that a fair return on the outlay actually made by the utility for the public service, assuming rea-

¹ 28 A. T. & T. Co., Commission Leaflets, 533. See also Berlin Electric Light Co., 3 N.H. P.S.C. 174, 21 A.T. & T. Co. Comm. L. 781. "The theory [reproduction cost] at first thought in all cases is plausible and attractive, but in the end oftentimes utterly illogical and unreliable, originally adopted as a mere time-saver by mere theorists, and sought to be enforced as against substantial and unbending facts," *Des Moines Gas Co. v. Des Moines*, 199 Fed. 204, 207. The general instability of the reproduction-new theory was realized and understood by prominent proponents of the Federal Valuation Act. Senators Bristow of Kansas and La Follette of Wisconsin, on February 24, 1913, participated in the following colloquy: "Mr. Bristow: 'There is one point I wanted to bring out with regard to that feature of the bill that requires the Commission to ascertain the cost of production new. *Such a finding, in my opinion, is not of any great value, so far as the rate-making is concerned.* It is a vacillating quantity; it does not represent in any sense the investment of the company in the construction of the road. To illustrate: In the suit that was pending the estimated cost of the reproduction of the Northern Pacific Railroad was involved. I am informed the same engineer reported in 1907 and in 1909 as to the cost of the reproduction new, and the value fixed in 1909 was one hundred and eighty-five million dollars more than the same engineer fixed the value of reproduction new in 1907.'

"Mr. La Follette [in part]: 'Let me say to the Senator on this question, that the Supreme Court of the United States has listed that as one of the values to be considered, and it has not yet by any express declaration eliminated it as a value to be ignored. So it seemed to the committee that we ought to give it its place here. I will, however, say to the Senator that *I am confident that the views of all the advanced commissions of the country that are doing this valuation work are that there should be very inconsiderable weight given to reproduction new.*' (*Congressional Record*, 3801.)" Quoted from the decisions of Commissioner Shaw of Illinois in the Springfield and Lincoln cases. See also Indianapolis Water Co. (Ind.) P.U.R. 1919-A-448, etc.

sonable prudence in investment and honesty and efficiency in operation, is all that can be allowed.

The Public-Service Commission of New Hampshire ¹ early recognized that property dedicated to the public use should neither increase nor decrease on account of a change in its reproduction cost; but that the utility should be enabled to earn a fair return upon the amount it had honestly invested, so long as such return could be secured from reasonable rates. The Wisconsin Railroad Commission accepted the investment theory in *Appleton v. Appleton Water Works Company*,² holding that the actual total investment in the enterprise should be made the basis of valuation for rate-making whenever possible, though a proper reconstruction appraisal might be of value as a check upon or aid to original cost. The St. Louis Public Service Commission in 1913 took a similar stand, holding that the original-cost method is the preferable one where there is no circumstance clearly indicating that the use of the method would bring about an unjust result.³

In the *Middlesex and Boston Rate Case* ⁴ the Massachusetts Public Service Commission, in accepting the original-cost theory, said:

It is entirely clear that in the long run the rate-paying public as well as the investing public will be best served if regulation takes as its fundamentally guiding principle an attempt to protect investments honestly and prudently made and wisely managed. Any other theory involves essential injustice, tends to make the development of our public utility companies a speculation and not an investment, operates as a premium upon various kinds of fraud; invites into the public service undesirable manipulators instead of sound, level-headed business managers; makes every rate case an almost interminable and labyrinthine inquiry into values with endless conflicts between so-called experts.

In *Edwards v. Glen Telephone Company* ⁵ the New York Second District Commission reached the conclusion that

¹ Report of Nov. 30, 1912, p. 302.

² 5 W.R.C.R. 215.

³ Report on South Western T. & T. Co., Oct. 14, 1913.

⁴ October 28, 1914. — ⁵ No. 4184, P.U.R. 1916-B-940.

if the books of the utility had been carefully kept the actual figures formed a rate base more equitable to both the public and the utility than any figures based upon theory; and that the company should not be given the benefit of a highly inflated value upon its property merely because such a value could be worked out from an imaginary reproduction cost regardless of what money had been actually invested in the property.

In *re* Cripple Creek Water Company¹ the Colorado Public Utilities Commission decided that while actual and reproduction cost may well be taken as checks upon each other, where original cost may be obtained accurately and the investment was made honestly, wisely, and prudently, the important test is the original cost to date, and estimates of reproduction cost should receive slight consideration.

In *re* Dunham,² the Missouri Public Service Commission took a similar stand, holding that original cost to date, determined by a competent audit including the amount expended in permanent improvements, furnishes the most satisfactory evidence as to value because it is based on facts capable of more or less exact determination under proper accounting methods; and that, when expenditures prove to have been reasonably required, with good business judgment, and the appreciation or depreciation in value is in evidence, the consideration of original cost to date is of peculiar aid.³

The recent cases devote little space to discussion of either original or reproduction cost, but the clear tendency is to modify the reproduction theory to make the results at-

¹ P.U.R. 1916-C-788. See also *In re* Portland Ry. Light & P. Co. (Or.) P.U.R. 1916-D-976.

² P.U.R. 1916-E-544.

³ A majority of the State regulatory commissions have accepted the actual-investment theory. See *Bluefield v. Bluefield Waterworks & Imp. Co.* (W.Va.) P.U.R. 1917-E-22; *Monroe Ind. Tel. Co.* (Neb.) P.U.R. 1917-E-471; *Lincoln v. Lincoln W. & L. Co.* (Ill.) P.U.R. 1917-B-1; etc.

tained by it conform more closely to original cost. Greater stress is placed upon original cost in an attempt to learn what the actual, justifiable capital expenditure of the utility has been.

The non-committal language and the reference to *Smyth v. Ames* in *Pine Lawn v. West St. Louis Water and Light Company*¹ are typical of the more recent decisions. The actual well-camouflaged theory upon which they proceed must be determined, if it can be found at all, by a careful reading of the full decision, often of the full record, not from any segregated portion of the decision. The Commission said:

We proceed to a consideration of all the matters presented in evidence bearing upon value, particularly the "original cost of construction, and the amount expended in permanent improvements" which together are now generally known as the "original cost to date," also "the present as compared with the original cost of construction," which latter is presented in evidence as engineers' estimates of the cost of reproducing the property new and in its present condition, following the rule in the well-known case of *Smyth v. Ames*.²

Only one recent case, *Re Indianapolis Water Company*,³ seriously disputes the investment theory, and while the language used repudiates the doctrine, except as one of many elements of value, the decision really raises but one point inconsistent with that theory. The charge against original cost is that it fails to consider appreciation. The language relied upon by the Indiana Commission appearing to make the most serious attack on the original-cost theory is that used by the Federal Supreme Court in *San Diego Land and Town Company v. Jasper*, where the Court says:⁴

¹ P.U.R. 1917-B-679, Missouri Public Service Commission.

² See also *Re Kansas City Elec. Light Co. (Mo.)* P.U.R. 1917-C-718; *Portage v. Portage Water Co. (Pa.)* P.U.R. 1917-D-17; *Re Bronx G. & E. Co. (N.Y. 1st Dist.)* P.U.R. 1917-D-777 dictum; *Greensburg v. Westmoreland Water Co. (Pa.)* P.U.R. 1917-D-478.

³ P.U.R. 1917-E-556.

⁴ 189 U.S. 442, 23 Sup. Ct. 571, 47 L. ed. 892.

It is no longer open to dispute that under the Constitution "what the company is entitled to demand, in order that it may have just compensation, is a fair return upon the reasonable value of the property at the time it is being used for the public." *San Diego Land & Town Co. v. National City*, 174 U.S. 739. . . . *That is decided and is decided as against the contention that you are to take the actual cost of the plant, annual depreciation, etc., and to allow a fair profit on that footing over and above expenses.*

Thus far the statement, considered as an independent abstract legal statement, would be fatal to the original-cost theory; but the Court continues:

... The only evidence in favor of a higher value in the present case is the original cost of the work, seemingly inflated by improper charges to that account and by injudicious expenditures.

Thus it appears that the Court is not considering original cost in the sense in which it has been since universally accepted, nor in the form in which the Indiana Commission defined it, but has in mind the narrower, early construction of the phrase synonymous with book value, which excludes betterments and includes injudicious expenditures. The objection the Court raises is the direct opposite of the appreciation theory of the Commission. Under the more liberal construction the elements of value suggested by the utility would have been excluded from the original-cost valuation and the question passed upon by the Court could not have arisen.

IX. *The Supreme Court and Reproduction Cost*

Both the original-cost and reproduction-cost theories of valuation were first given definite form by the decision in *Smyth v. Ames*. The next valuation case carried to the Supreme Court was *San Diego Land and Town Company v. National City*,¹ decided the following year. In this case, after carefully reviewing *Smyth v. Ames*, the Court states the basis of calculation suggested by the applicant. That

¹ 174 U.S. 739, 19 Sup. Ct. 804, 43 L. ed. 1154.

basis makes no reference to present cost of construction or to reproduction cost. The Court then proceeds to condemn appellant's basis of calculation, not because it makes no reference to reproduction cost, but because by not considering present value it works an injustice not to the utility but to the consumer, for the original cost may well exceed the present value. There is opportunity for reproduction cost to be set up as a check upon investment, but the criticism of the Court contains no reference to present cost of construction or to reproduction cost. It seems evident that the Court did not consider reproduction cost an essential element of value. It is probable, in view of the fact that the Court had its recent decision in the Ames Case under consideration, that Justice Brewer construed the language Justice Harlan had used as directing a comparison of present value with original cost of production, rather than a comparison between reproduction and original cost, or else considered reproduction cost as but a possible not a necessary check upon the original-cost theory. The failure of Justice Harlan to dissent from the decision may reasonably be construed as indicating that no great injustice had been done to his opinion.

The next Federal Supreme Court case in which the reproduction theory could arise as an issue was *San Diego Land and Town Company v. Jasper*,¹ decided in 1902. In this case the Court rejects original cost in its narrow sense as the sole basis of value because it does not protect the public from "inflated and improper charges" and "injudicious expenditures." The standard of value fixed by the earlier *San Diego Case* was accepted. Neither the language of *Smyth v. Ames* nor the case itself was referred to. Neither the present cost of construction nor reproduction cost was suggested as a supplement to, or check upon, original cost. The aim was the protection of the public, not the utility.

¹ 189 U.S. 439, 23 Sup. Ct. 571, L. ed. 892.

The next case involving this theory before the Federal Supreme Court was *Stanislaus County v. San Joaquin and King's River Canal and Irrigation Company*,¹ decided in 1904. The decision was based wholly upon the two San Diego Cases cited above. *Smyth v. Ames* was referred to only indirectly as having been followed in those cases. Neither present construction nor reproduction cost was mentioned.

Reproduction cost came before the Supreme Court as a direct issue for the first time in 1909 in *Knoxville v. Knoxville Water Company*.² In discussing its use by the master of the lower court, Justice Moody says:

The cost of reproduction is *one way* of ascertaining the present value of a plant like that of a water company, but that test would lead to obviously incorrect results if the cost of reproduction is not diminished by the depreciation which has come from age and use. . . . *The cost of reproduction is not always a fair measure of the present value* of a plant which has been in use for many years. The items composing the plant depreciate in value from year to year in a varying degree.

After a lapse of eleven years the Court again discusses the reproduction cost hinted at in the dictum of *Smyth v. Ames*. It does not consider reproduction cost a necessary element of value. The decision refers to no requirement in the *Ames* Case. It merely says that such an element of value is admissible if properly used, not as establishing a final valuation, but as evidence of present value. The prodigal is welcomed back, not with thanksgiving, but dubiously with criticism. It is recognized, not as an end, but as a means toward an end, and that end is the "fair present value" of the property. It is evident, therefore, that the results obtained by the reproduction method were not the fair present value, but only one element in the indication of that value. The Court stands just where it did in 1898; the reproduc-

¹ 192 U.S. 201, 62 Sup. Ct. 241, 48 L. ed. 406.

² 212 U.S. 1, 29 Sup. Ct. 149.

tion cost is a check upon actual investment to protect the public from "inflated and improper charges" and "injurious expenditures."

In *Willcox v. Consolidated Gas Company*¹ the Court had occasion to state the test of rate reasonableness again, the same year. It fixed "the fair present value" as the criterion. No specific mention was made of present cost or reproduction cost. The decision, however, seems based upon the latter theory. In considering present value, the Court said:

If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase. That is, at any rate, the general rule. We do not say there may not possibly be an exception to it where the property may have increased so enormously as to render a rate permitting a reasonable return upon such increased value unjust to the public.

This case marks the climax of reproduction-cost valuation. The fruits of unrestrained flights of imagination through the capital accounts here reach a point which renders a reaction inevitable. The Court has lost sight of both the aim and the basis of regulation. It is thinking only of the safeguards of private property and disregarding wholly the purpose of property and the social interest therein. The result of the narrowed vision was that the Court went astray on the one phase of the question it did have in mind. It in effect gives private property in the regulated business greater protection than it would have enjoyed in the absence of regulation by guaranteeing a return on a non-productive element of value. This is, to say the least, straining the Constitution to the limit.

The holding even here, however, does not attempt to saddle the burden of increased prices of material and increased wages, the cost of paving never cut, and other imaginary values of the strained reproduction theory upon the public for the benefit of a utility which never paid the

¹ 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 382.

increased prices. The Supreme Court has never sanctioned the conjectural reproduction-cost theory for any use in valuation. The intent of the decision was merely to allow the utility in common with all others the benefit of increased values. It is but a restatement and explanation of the doctrine of the San Diego Cases upon which it is predicted.

In *Lincoln Gas and Electric Light Company v. Lincoln*¹ the reproduction cost was used by the master "as one means of finding the present value." The Court did not refer to the propriety or impropriety of the means, but restated the rule of the San Diego Case and remanded the case for the lower court to determine value more accurately than had been done.

In *Simpson v. Shepard*,² commonly known as the Second Minnesota Rate Case, the Court reverts to the rule of *Smyth v. Ames*, restating it without comment. That rule stated substantially the system followed by the master in appraising the property, though his final valuation was based on the reproduction cost. In commenting upon this finding the Court said:

It is manifest that an attempt to estimate what would be the actual cost of acquiring the right of way if the railroad were not there is to indulge in mere speculation. The railroad has long been established; to it have been linked the activities of agriculture, industry, and trade. Communities have long been dependent upon its service, and their growth and development have been conditioned upon the facilities it has provided. The uses of property in the communities which it serves are to a large degree determined by it. The values of property along its line largely depend upon its existence. It is an integral part of the communal life. The assumption of its non-existence, and at the same time that the value that rests upon it remains unchanged, is impossible and cannot be entertained. The conditions of ownership of the property and the amounts which would have to be paid in acquiring the right of way, supposing the railroad to be removed, are wholly beyond reach of any process of rational determination. *The cost-of-reproduction method is of service in ascertaining the*

¹ 223 U.S. 349.

² 230 U.S. 352, 33 Sup. Ct. 729.

present value of the plant, when it is reasonably applied and when the cost of reproducing the property may be ascertained with a proper degree of certainty. But it does not justify the acceptance of results which depend upon mere conjecture. It is fundamental that the judicial power to declare legislative action invalid upon constitutional grounds is to be exercised only in clear cases. The constitutional invalidity must be manifest, and if it rests upon disputed questions of fact, the invalidating facts must be proved. And this is as true of asserted value as of any other fact.

The Court clearly sounds the death-knell of the claim of reproduction-cost advocates that that theory is to be adopted as the sole measure of present value. It fixes the true place of the theory with equal clearness. Reproduction cost when rightly used is of worth in determining fair present value. It is too speculative to be trusted alone, but as a check upon other estimates it is admissible, conditioned always upon its being fairly used.

The Second Minnesota Rate Case is the most recent comment of the Supreme Court upon reproduction cost. It leaves little room for further discussion by future cases.

X. Summary

Fair value deals primarily with valuation for rate-making purposes. The fair value discussed is the present reasonable investment represented by the tangible and intangible property which the utility owns. It is based upon original-cost and reproduction-cost appraisals showing the total investment in the property. The final valuation is worked out from the inventory figures and the corporate history which accompanies them as a sort of exhibit or supplement. The aim is to determine the actual, unimpaired, reasonable investment in property used and useful in rendering the public service. For this purpose the original-cost appraisal serves best, when accurately drawn. The reproduction-cost appraisal, when it approximates facts and avoids the flights of fancy which have so often marred it in the past, is serviceable as a check upon and supple-

ment to the original-cost estimate. The final valuation is a heterogeneous estimate based in part upon original cost, in part upon reproduction cost, excluding all values not used or useful for the public service, deducting depreciation from the inventory figures to arrive at present value or unimpaired investment, and taking into consideration all the equities of the particular case. It follows no definite formula, it acknowledges no binding precedent. It is based on natural justice and equity, bounded by the constitutional safeguards of property, the necessity of attracting capital, and the dominating limitation that rates must not be fixed above the value of the service.

PART II

THE APPLICATION OF THE THEORY OF FAIR VALUE

CHAPTER VI

THE VALUATION OF TANGIBLE PROPERTY

I. *Tangible and Intangible Values*

The property representing the reasonable unimpaired investment is of two kinds, tangible and intangible. The tangible property of the utility includes its lands, buildings, equipment, and property interests, including water rights. The intangible property is almost innumerable, depending in the reproduction inventory upon the versatility of the appraiser's mind. It includes organization costs, engineering, superintendence, legal expenses, contingency allowances, etc.

We are here concerned with tangible property. Its valuation is less speculative. Two problems are encountered: (1) what property items are to be included in the final valuation; (2) to what extent has the investment in those items been depreciated by ordinary wear and tear and by obsolescence. We deal now with the first of these questions.

II. *Property not Used or Useful*

Not all property value of the utility can be allowed for rate-making purposes. Often the company seeks to carry in its capital account large values representing discarded property. Real estate no longer required for utility purposes held pending an advantageous sale, machinery superseded by more modern equipment before being junked, power plants held for emergency use in connection with transmission-line service, and similar items, some with a semblance of present usefulness, none with a present use, are retained in the capital account. A valuable tract of land suitable for an office or power site may be used for storage when a much cheaper lot would serve the purpose equally

well. A structure may be built with capacity far in excess of the needs of the present or immediate future. Lands may be purchased at an opportune time to be held for distant use as a terminal site, etc. The valuation rule in such cases when a rate-making base is sought is that applied in all cost estimates for price-fixing. Only the property used and useful in rendering the service under consideration can be valued.¹ The charge for unused property must be made to profit and loss.

The valuation rule generally applied in such cases is stated in the *La Crosse Gas and Electric Company Case*,² thus:

When such non-operating property is held by a utility, the only warrant for its retention is expected savings and additional net income. This being the case, an addition to the physical value of the plant for non-operating property can be justified for rate-making purposes only when the income expected therefrom is added to the actual income or is deducted from the operating expenses.

And in the case of the *Darlington Electric Light and Water Power Company*:³

Where equipment not actually part of the producing plant has been retained and serves as an emergency or reserve unit, it is properly included as property used and useful in serving the public. Equipment, however, which has been cast aside for larger units, more adapted to the present use of the plant, or which has been abandoned as impracticable, cannot be included.

¹ The State Commissions are unanimous in holding that abandoned equipment and property not used or useful in the utility business must be excluded from the valuation unless it is held to meet the reasonable need of the immediate future. The leeway allowed under this exception varies somewhat, being greater in those States still in the development stage and in one or two jurisdictions undeniably pro-utility in their sentiment. In California, Illinois, Massachusetts, New York, and Wisconsin provision for future needs is limited as far as possible without handicapping efficient management. Property used only for revenue, such as a house rented out, stock in trade, stock in other companies, etc., has also been excluded without exception. It seems useless, in the absence of dissent, to cite the long line of decisions from the many jurisdictions.

² 8 W.R.C.R. 138, 164.

³ 5 W.R.C.R. 397.

In considering construction for future needs the Federal Supreme Court excluded excessive investment in *San Diego Land and Town Company v. Jasper*,¹ on the theory that if a plant is built for a larger area than it finds itself able to supply, or if it has not secured the customers contemplated, neither justice nor the Constitution requires that part of the contemplated number should pay the full return.

Where the investment was made at the order of the city and rendered useless by its action without fault of the utility, the Wisconsin Commission "as a matter of simple justice" refused to exclude entirely the property from the valuation.²

There seems to be little room to question the equity of refusing to force the public to pay rates upon property which is neither used nor useful in rendering the service it receives. A valuation including such property would force rates above limits fixed by the value of the service, a limit imposed upon the utilities by the Federal Supreme Court. It would violate all laws of cost determination and disregard all principles of economics. The exclusion of such property from the valuation can raise no question of property rights under the Fourteenth Amendment, for the property not being used the use is not taken and compensation cannot be required.

Where the property is held for emergency use, however, the case is quite different. There is an actual stand-by, readiness-to-serve use rendered the consumer who pays the rate. The service if reasonable in extent is a legitimate part of the regular utility business. Such property must be included in the valuation to the full extent of its worth for the use to which it is put. The question is complicated. The actual investment ceases to be the determining element.³ What part

¹ 189 U.S. 439, 446, 23 Sup. Ct. 571, 47 L. ed. 892.

² *Re Manitowoc Water Works Co.*, 7 W.R.C.R. 71, 80.

³ The problem here presented illustrates the necessity of keeping in mind constantly the fact that cost of service is the element primarily sought. Value of the property is involved only in so far as it is a feature

of this equipment is really used as an emergency plant? What is the investment in property at present used in rendering utility service? What part of the original investment has been withdrawn or replaced? The problem seems to become, What would it be reasonable for the utility under existing conditions to invest in such service? This line of reasoning, however, involves the fallacies of the substitute-plant idea, discarded as a basis for determining cost of service because it deals with value, not cost. The problem is merely one of apportionment to determine the part of the investment actually used. The utility is entitled to more than junk value because actual service is rendered; it is not entitled to actual investment because the service for which the investment was made is no longer rendered. Investment, however, must remain the measure of the rate-making value of such equipment so long as the management is justified in retaining it in the emergency service at all.

Excessive investment to meet anticipated future demands presents still another problem. Adequate provision for future requirements which must arise within the immediate future are a necessary capital expenditure. Any sound management must make comprehensive preparation for future needs. Within reasonable limits such expenditures provide a present service. But investment made for future needs where the contingency is remote is but a speculation indulged in by the utility. The cost of the venture cannot be taxed against the consumer before the property is actually used. Excessive and unreasonable investment in property which may sometime be useful in rendering the service, so far as present consumers, present rates, and present value are concerned, stands in no different position from any other property not used or useful. In the border-

of cost of service. Where the property is not used at all or is used in part only in rendering the service, the total value of the property cannot be included in the rate-base valuation. It would not be a proper charge to cost.

land between reasonable and unreasonable investment for future needs, between sound business foresight and speculation, the investor must assume the entire responsibility for his judgment.

III. *Property Acquired without Cost*

The fact that the rate-making valuation deals primarily with investment and cost, rather than with value, raises the question whether property acquired by way of gift, or otherwise without cost to the investor, may properly be included in the final valuation for rate-making purposes. The early cases, for the most part, misled by the term "present value," took the view that because the title to the property vested in the utility, its value should be included for rate-making purposes.¹ The reasoning seems fallacious.

Such property represents no sacrifice, investment, or element in the cost of service until replacement is necessary; because the gift creates a clear implied trust and the utility holds but the naked title, the beneficiary interest being in the consumers. If the gift were not so restricted, if the utility were not engaged in rendering a governmental service, the donee would be entitled to the benefits from the use by way of a return; and to a depreciation allowance to keep his investment intact.

The better view of the question, and that adopted by courts and commissions in the more recent cases, is that property which does not represent real investment or sacrifice on the part of the stockholders cannot be included in

¹ *Findings as to Value of Railroads*, R.R. Comm. of Wash. 1907-08, pp. 127, 449; *Buell v. Chicago, M. & St. P. Ry.*, 1 W.R.C.R. 324, 356; *Steener-son v. Gt. Northern Ry.*, 69 Minn. 353, 72 N. W. 713; *Tighe v. Clinton Tel. Co.*, 3 W.R.C.R. 117, 126; *Shepard v. N. Pacific Ry.*, 184 Fed. 765; *N.Y.N.H. & Hartford R.R.*, Rept. Mass. Joint Comm. 1911, pp. 51-54; *Central of Georgia Ry. v. R.R. Comm. of Ga.*, U.S. Dist. Ct. Middle Dist. Ala. No. 261, Equity; *Central P.R.R. (Cal.)* P.U.R. 1916-B-845; *Bd. of Trade v. Mountain Home Tel. Co. (N.Y. 2d Dist.)* P.U.R. 1916-C-688; etc.

the rate valuation.¹ This view certainly conforms more closely to the purpose of valuation than the earlier rulings did. Thus service pipes and service wires constructed by the consumer at his expense cannot be included in a valuation of the company's property for rate-making, and right of way or other land donated for utility use must be excluded.²

IV. *Property Acquired from Surplus*

The problem of valuation of property created from surplus earnings is closely allied to that of property acquired without actual expenditure by the stockholders. Where the surplus put into additions and betterments represents earnings above a fair return on the investment, it would seem that the property thus acquired could differ little from property vesting in the utility by way of gift or private construc-

¹ *San Diego Water Co. v. San Diego*, 118 Cal. 556, 50 Pac. 633; *Ashland v. Ashland Water Co.*, 4 W.R.C.R. 273; *Ripon v. Ripon Light & Water Co.*, 5 W.R.C.R. 1, 10; *Washburn v. Washburn Water Works Co.*, 6 W.R.C.R. 74, 92; *Beloit v. Beloit Water, Gas & Electric Co.*, 7 W.R.C.R. 187, 215; *Marin Municipal Water Dist. (Cal.) P.U.R.* 1915-C-433; *Pine Lawn v. West St. Louis Water & Light Co. (Mo.) P.U.R.* 1917-B-679; and cases cited in Note 3.

² "The real question is, how many services the company paid for . . . where a service is laid in the land of the consumer and extended through the street to the main in front of his house and paid for by him, it becomes his property and not the property of the company. If the company is to be allowed in its capital account for such a main, then the consumer must continue in perpetuity to pay a return of at least 6 per cent to the company upon property which he, the consumer, has paid for. It is clear that this is neither reasonable nor just, and cannot be permitted." *Buffalo Gas Co. v. Buffalo*, 3 P.S.C. (2d Dist. N.Y.) 553; The holding has been the same where pole lines and wires constructed by the consumer have become an actual part of the utility's property. See also *Beloit v. Beloit Water, G. & E. Co.*, 7 W.R.C.R. 187, 215; *San Diego Water Co. v. San Diego*, 118 Cal. 556, 50 Pac. 633; *San Diego Consol. G. & E. Co. (Cal.) P.U.R.* 1917-A-930; *Sandpoint v. Sandpoint Water & L. Co. (Idaho) P.U.R.* 1915-F-445; *Apple v. Brazil (Ind.) P.U.R.* 1915-C-561; *Commercial Club v. Terre Haute Waterworks (Ind.) P.U.R.* 1916-B-180; *Commercial Club v. Citizens G. & E. Co. (Ind.) P.U.R.* 1916-E-1; *Thayer v. Beaver Valley Water Co. (Pa.) P.U.R.* 1916-E-962; *San Gabriel Valley Water Co. (Cal.) P.U.R.* 1916-B-895; *Re Purchase Oshkosh Water Works Plant*, 12 W.R.C.R. 602; *Superior Commercial Club v. Duluth St. Ry. Co.*, 12 W.R.C.R. 1; etc.

tion. The two cases, however, are essentially different. Property acquired from surplus always represents sacrifice and actual investment by the stockholders. Donated property does not.

It is undeniable that profits in excess of a fair return upon the investment should be distributed by way of low rates or impressed with a trust character for the benefit of the public. But where the public has found it expedient to adopt a *laissez-faire* policy to encourage utility development, it cannot be said that rates unduly high were illegally collected in the absence of regulation. The title to the surplus vested without limitation or condition in the shareholder as a reward for investing in a venture which the public itself deemed so speculative that regulation should be waived. This being true, the waiver of the right to declare a dividend and the creation of additions and betterments from the dividend-available surplus represents just as great a sacrifice, just as real an investment as it would had the formality of declaring a dividend and reinvesting the funds been indulged in.

In the case of donation or land grant, the aid has been given for a specific purpose and it requires no great strain upon the imagination to conceive of it as the creation of an implied trust to use the property donated for the public benefit. The payment of excessive rates, however, differs materially. It carried with it no requirement that the funds be left in the business or used for the public benefit. The implied trust doctrine could not be applied. Its strained application would only penalize those who came nearest to benefiting the public.

Where the invested surplus arises from a waiver of the right to declare dividends from the funds included in the fair return upon the investment, there can be little question but that the property acquired from it should be valued for rate-making.

There have been few court or commission rulings upon

the question of invested surplus and such decisions as have been rendered have not been uniform.¹ The problem was discussed at length by the Massachusetts Commission in *Re Haverhill Gas Light Company*.² The evidence showed that the utility had gradually accumulated a large surplus which it had invested in the property. Its rates had been as low or lower than those of other companies of the same class in the State, and the quality of the service had been the best. The accumulation appeared to have been due to exceptional management and to a rapid gain in wealth and population in the community supplied. The Commission held that since the property in which the surplus had been invested must otherwise have been secured by new capital contributed by the shareholders, it should be used to the substantial benefit of consumers and shareholders alike. It should benefit the former by relieving them of part of the burden which the investment of additional capital imposes, by affording ready facility for minor extensions, etc. It should benefit the stockholders by strengthening the corporation, enhancing the security of the original investments, and in bringing a higher return than otherwise. Such a surplus, the Commission admits, is by every principle of law the property of the corporation, which has an undoubted legal right to distribute it as a dividend as it is acquired, or

* ¹ It has been frequently held that surplus investment must be valued for rate-making when charges have not been exorbitant or when the surplus has arisen by reason of failure to declare dividends. See *Bridgeport Natural Gas & Oil Co. (W. Va.)* P.U.R. 1916-C-253; *Re Valparaiso Tel. Co. (Neb.)* P.U.R. 1915-E-578; *Re Salem Tel. Co. (S. Dak.)* P.U.R. 1919-B-734. It has been held unreservedly that all investments from surplus are properly valued; see *Brymer v. Butler Water Co.*, 179 Pa. 231, 36 Atl. 249; *Spokane v. N. Pac. Ry. Co.*, 15 I.C.C. 376, 416; *Fall River Gas Works v. Bd. of Gas & Elec. L. Comm.*, 214 Mass. 529, 102 N.E. 475; *Charlesworth v. Omro Elec. L. Co. (Wis.)* P.U.R. 1915-B-1; *Re Los Angeles (Cal.)* P.U.R. 1916-F-593. Another line of cases holds as unqualifiedly that additions and betterments paid for out of earnings form no part of the investment for rate-making; see *Bay State Rate Case (Mass.)* P.U.R. 1916-F-221; *Landon v. Lawrence (Kan.)* P.U.R. 1916-B-331.

² Mass. Bd. of Gas & Elec. L. Comm., 9th Ann. Rept. p. 90.

pro rata to the shareholders in case of liquidation. Notwithstanding this, the Commission contends, the circumstances attending the accumulation of the surplus impose upon the company, so long as it continues to exercise the functions of a public monopoly, the duty to employ it for the joint advantage of the consumers and the corporation.

The Commission erred in its application of the theory of public interest. All public-utility property is affected with a public interest. But the encumbrance thus created is identical in all cases. The origin of the private title to the property cannot affect that interest. It deals with the use, not the title, of the property. A trust may be imposed upon the property, or title granted upon restrictive conditions, but the encumbrances thus created are imposed in addition to the general public interest that arises from the use of the property in the public service. The two types of encumbrances are quite distinct. Unless a specific limitation can be shown, similar to those implied from donation or acquisition of title by way of eminent domain, invested surplus stands in no different position from other investment in the public service.

It has been argued ¹ that the public has paid for additions and betterments made from earnings. When it is admitted, as it must be, in view of existing law, that the excess profits were the unrestricted legal property of the company, and ceased to be funds of the public, before the decision to divert them to either dividends or additions and betterments was made, it is difficult to see how this theory can be sustained. The public has no more paid for addition made from legal surplus than for betterments made from capital earned as fair return upon the reasonable investment declared as dividends and reinvested in the securities of the utility.

Additions and betterments created from surplus earnings

¹ New Hampshire Pub. Serv. Comm. Rept. on Investigation of Railroad Rates, Nov. 30, 1912.

are investments and, if used and useful in rendering the public service, must be included in valuation for rate-making purposes if the rate base is to stand the test of the due-process clause of the Fourteenth Amendment.

This reasoning applies, however, only to additions and betterments. When the expenditures were made for replacements the equipment cannot be capitalized to include the new expenditure. When the surplus was made up of funds which should have constituted a depreciation reserve, but were not so designated by law, the remedy for failure to set aside the fund is by subtracting accrued depreciation from the original investment rather than by disregarding the new capital expenditures. The results are the same in either case.

V. The Valuation of Land

The determination of land value is the most perplexing problem in the valuation of tangible property, and one of the most troublesome phases of public utility regulation. Little assistance can be gleaned from the court decisions. The Supreme Court has made few rulings upon land value, outside decision in the Second Minnesota Rate Case; and practically all of its decisions on this question have been rendered in connection with reproduction-cost appraisals. Since that theory not only never has received the sanction of the Court as a sole basis for final value, but has been definitely rejected for that purpose, it follows that the utterances of the Court, so far as they carry weight as precedent, must be restricted to the limited area of the reproduction-cost appraisal.

The attempts at land valuation have been haphazard. Under the plea of the magnitude of the task, multiple and percentage methods of guesswork valuation have been employed, which can find the slight excuse they own, only in the general chaotic state of valuation matters. From the jumbled experiments three fairly well-organized methods

of land appraisal have been developed. They are the local-expert method, the sales method, and the appraiser method. They apply, of course, only in the reproduction-cost and estimated original-cost inventories.

The local-expert method of valuing land is but the basing of the appraisal on the opinion evidence of local real-estate experts. Nothing could be more uncertain than such opinion evidence as to real-estate values. The value of the testimony depends entirely upon the care, labor, ability, training, and honesty of the appraiser.

The sales method assumes to collect and compare systematically the data relating to the transfers of neighboring property having conditions or characteristics similar to the land whose value is to be determined. It seeks to determine the true market value of the land. And it attempts to do this by duplicating as nearly as possible the process employed by the local expert. The aim is to reach conclusions as to value approximating those which would be reached by such experts acting wholly without prejudice.

The two methods base value upon the same evidentiary facts, but the sales method substitutes the opinion of the Commission for that of the expert witness. The appraiser method differs but slightly from the sales method. It attempts to apply the judicial process of the assessor instead of the non-judicial "mental process" of the local expert.

These methods have all been criticized because they are based upon an estimate. Business investments are made, loans effected, taxes levied, and general credit based on exactly similar estimates of land value. Any form of land valuation other than actual investment figures must be an estimate of the value by some one or other. The aim is merely to make that estimate as fair as possible to all the parties concerned.

All three of these forms of valuation seem to be out of accord with the general theory of rate valuation. They attempt to determine market value while rate value is cost,

i.e., reasonable present investment. This fallacy is, of course, cured to a large extent when the market value sought is that at the time of the purchase by the utility, since such market value must approximate the actual investment. The same reasoning holds that market value of surrounding, similar land is the proper estimate of land value for the reproduction-cost appraisal.

VI. *The Original-Cost Appraisal*

Original cost, where it can be obtained from the books of the company or estimated with a fair degree of accuracy, must be the controlling factor in the final valuation of lands for rate-making.¹ It alone is based upon the actual investment which rate valuation seeks to ascertain. When properly determined, the original-cost appraisal need only be questioned concerning the fitness of the property and its actual use in the service, to determine the final land value for rate-making.

Two serious questions concerning land value may arise when the appraisal is based upon actual records. It may have happened that the land, when acquired, was improved with buildings unsuitable for utility use. The first question is, Shall the land be valued for rate-making at the purchase price, or at that price plus the cost of removal less the salvage value of the buildings? It may have been necessary in making improvements upon the property as acquired to

¹ The importance attached to this figure by the State Commissions is demonstrated by the Report of the Committee on Valuation of the Nat'l Ass'n of Railway Commissioners, Nov. 1916, 28th Annual Report, p. 197: "Original cost is believed by the members of this Committee to be the strongly controlling factor in the ultimate determination as to the weight to be accorded land values in a rate case. . . . There are practical difficulties in many cases in determining the original cost of the present property. . . . But as the disputed principles in land appraisals involve sums aggregating fully half the outstanding nominal capitalization of the entire railroad system of the Nation, this Committee has urged that no obstacle not insuperable be permitted to prevent the most detailed and accurate statement of these important facts."

make outlays of a temporary nature or of such character that they have ceased to be apparent. The second question is, What portion of such expenditures shall be included in the final valuation?

The removal of unsuitable buildings is a legitimate part of the cost of acquiring the land, providing the site was a reasonable one under the conditions. But any revenue derived from the sale of the buildings must be credited to the cost, and the land be valued for rate-making at the resulting figure. It is only thus that the actual necessary sacrifice or investment can be determined.

All reasonable unimpaired investment must be included in the valuation. Expenditures for a temporary structure necessary to the erection of a permanent bridge form a part of the cost of the bridge and depreciate with the loss of utility of the permanent structure. The cost of ballast merged with the soil keeps a lessening worth so long as the ballast retains its identity and serves a real purpose in rendering the public service. Fills, grading, and foundations, reasonable in extent, constitute a proper element of rate value so long as they are used or useful.

VII. *Appreciation of Land Values*

The principal objection to the original-cost valuation of land, advanced by the utilities, is that it excludes appreciated value. The issue thus raised is that which underlies all valuation, i.e., is value or cost sought? It has been decided in general in favor of cost.

It is difficult, on strict analysis, to see just how original-cost valuation for rate-making works a hardship if regulation is justifiable at all. Modern regulation first sets up a monopolistic business, then imposes on it the restrictions of competitive rate-making. It may prove profitable, therefore, to consider the action of competitive forces with respect to appreciation. Competition is subject to the same criticism as original-cost valuation. It lacks respect for the

alleged divine right to profits based on appreciated value. One manufacturer cannot demand more for his product than a near-by competitor simply because his factory site has risen in value more rapidly, especially if the rise in value is wholly dependent upon the use of the property in other lines of business. If he wishes to take immediate advantage of the increased value, he must sell out and find a less valuable site for his plant. If he continues to occupy the more valuable site, competition will force him to accept a return based upon his investment, not the value of his land. If his business is a public service he has voluntarily waived the right arbitrarily to dispose of the property to secure the increased market values, presumably in consideration of the decreased risks of the utility business. The moment the "unearned" increment grows to any considerable magnitude, if regulation is justifiable at all, the property becomes too valuable for utility purposes and the excess value will not be used or useful property within the meaning of the law. Successful regulation can establish no greater rate basis than competition allows.

One of the chief aims of regulation, it will be remembered, is the elimination of speculation, by placing of the public service upon a sound business basis and limiting the return. To base the return upon appreciated value would reopen the door to manipulation and speculation, produce fluctuating rates, and bring back the elements of every phase of instability which regulation seeks to eliminate.

The champion of appreciated rate value must contend that the increment is "new investment," the use of which is taken by the public within the meaning of the due-process clause. It is necessary, in order to substantiate this claim, to show first that the "new investment" is used by the public; that the use is taken. Appreciation is a value *in futuro* resting only upon the disposal of the land, fluctuating with conditions, and undeterminable in amount while contingent; and the owner, in consideration of franchise privi-

leges, the use of a portion of the State's sovereignty, the assurance of the benefits of the economies possible under monopolistic organization, and the decreased risks under government regulation, has covenanted to use the land for a certain purpose and refrain from arbitrarily disposing of it for his own benefit. Be it ever so valuable for another purpose, therefore, the land has not increased in value for the utility service. The consumer gets no better service. No legal title to increased value rests in the owner. He cannot demand appreciation as a right. It may or may not come. It is a wholly incidental increase, speculative and liable to disappear with the next turn of the wheel. The alleged new investment stands in no different position from other property neither used nor useful. To hold otherwise would be to separate cost of service and value of service, and give the term "cost" the rejected meaning of actual cost rather than the accepted meaning of reasonable cost. The advocate of appreciated value for rate-making closes his eyes to the value-of-service limitation to which the Supreme Court has more unswervingly adhered than to the cost-of-service rule itself.

It may be of assistance here to revert to the consideration of the nature of private property. It is a bundle of rights existing for the benefit of the public and increasing or decreasing numerically as the public directs by way of the police power. In the case of appreciation the public welfare requires that rates be limited to cost, that appreciated land value be left to the owners to vest at their current value when the land is disposed of, but that so long as the land is employed in the public service those values cannot be considered in rate-making, since they require no additional sacrifice or outlay and they add nothing to the service rendered. The limitation is characteristic of all government regulation and no more retroactive than any other limitation upon private property rights in promotion of the common good. The contingent right to

the increased value, if it is not wiped out before the land is sold, is not within the protection of the due-process clause because it does not add to the service, and the service, not the property, is the thing taken and to be paid for. Only property values directly contributing to the service taken can be brought within the limitations of the Fourteenth Amendment.

Justice Van Fleet, in *San Diego Water Company v. San Diego*,¹ in considering the general problem of increase in values held that it would be unjust to permit consumers to plead that a similar works could now be constructed at a less cost, and equally unjust to require them to pay an enhanced price on the ground that it would now cost more to construct similar works. Such a contingency might happen, the Court agreed, but to increase rates for that reason would allow the company to make a profit, not as a reward for its expenditures and services, but by way of a speculation in which the company or consumer wins or loses upon the casting of a die, or equally unpredictable market fluctuations.

The same line of reasoning is applied specifically to appreciation in *Re Bay State Street Railway Company*,² where the Massachusetts Public Service Commission held that car riders cannot be expected to pay higher fares because land has increased in value or lower fares because it has decreased; that if the company sells its property, it is entitled to whatever profit it makes, but so long as the land is employed in the street-railway business it is dedicated to a public use and held subject to the conditions attaching to such use.

The Supreme Court has avoided the problem of "unearned" increment as far as possible. Justice Harlan did not touch upon it in the *Ames Case*,³ or in *San Diego Land*

¹ 118 Cal. 556, 50 Pac. 633.

² P.U.R. 1916-F-221; 10 Rate Research, 120. See also *In re Chicago North Shore Elec. Ry. Co.*, P.U.R. 1918-A-388.

³ 169 U.S. 466, 18 Sup. Ct. 418, 42 L. ed. 819.

and *Town Company v. National City*.¹ He concerned himself primarily with avoiding valuation based upon excessive original cost and security issues. Appreciation was not mentioned in *San Diego Land and Town Company v. Jasper*.² And the *Knoxville Case*³ dealt primarily with depreciation. The question was touched upon directly, however, in *Willcox v. Consolidated Gas Company*,⁴ where Justice Peckham said:

If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule. We do not say there may not possibly be an exception to it, where the property may have increased so enormously in value as to render a rate permitting a reasonable return upon such increased value unjust to the public.

This outgrowth of the condemnation analogy and reproduction theory, prefaced by the general language as to fair present value, illustrates the confusion in valuation matters. The Court itself realizes that the doctrine cannot be lived up to; that it is a makeshift rule. The danger of basing rates on excessive land values is realized and stated, but the Court is unwilling to break away from the misconstrued rule of *Smyth v. Ames* and the reproduction-cost theory. That step was taken, however, in the *Minnesota Rate Cases*.⁵ There the Court, face to face with the injustice of applying the reproduction-cost theory when it operated to allow a present value based on no actual investment, though still voicing the theory, refused to apply it. It clearly appears, therefore, that the Supreme Court does not consider that a failure to incorporate "unearned" increment in the rate-base valuation amounts to a taking of private property within the meaning of the due-process clause of the Fourteenth Amendment.

¹ 174 U.S. 739, 19 Sup. Ct. 804, 43 L. ed. 1154.

² 189 U.S. 439, 23 Sup. Ct. 571, 47 L. ed. 892.

³ 212 U.S. 1, 29 Sup. Ct. 149.

⁴ 212 U.S. 19, 52, 29 Sup. Ct. 192, 53 L. ed. 382. ⁵ 230 U.S. 352.

It is proper, however, to consider appreciation to some extent in the reproduction-cost appraisal, for each appraisal must be consistently made in so far as it is possible to do so without violating reason. The reproduction cost of land is the market value of surrounding land of like nature, and that market value in so far as it exceeds the value at the date of original purchase by the utility includes appreciation.

The State Commissions in the earlier cases, under the influence of the reproduction-cost theory, often allowed appreciated value¹ in the final valuation, but the tendency since the repudiation of reproduction cost as the principal basis of rate valuation has been to exclude appreciation.²

VIII. *The Reproduction-Cost Appraisal*

The preceding consideration of appreciation indicates that since the reproduction-cost appraisal still has a place in valuation, it is necessary specifically to consider its application to tangible property. In doing so, however, the

¹ *State Journal Printing Co. v. Madison G. & E. Co.*, 4 W.R.C.R. 501; *Municipal League v. Pacific G. & E. Co.*, 21 A. T. & T. Co. Commission Leaflets, 699; *Fuhrmann v. Cataract P. & C. Co.*, 3 P.S.C. 2d Dist. (N.Y.) 656; *Re Indianapolis Water Co. (Ind.)* P.U.R. 1917-E-556; see also *Louisville & Nashville R. Co. v. R.R. Comm. of Ala.*, 196 Fed. 800, 821; *Rept. of Committee on Taxes & Valuation*, 22d Ann. Rept. of Nat'l Ass'n of Ry. Commrs., 1910, p. 141; 21st Ann. Rept. So. Dakota R.R. Comm. 1910, p. 27; *Rept. St. Louis Pub. Service Comm. on Electric Rates*, 1911, p. 33; etc.

² *Western Rate Advance Case*, 20 I.C.C. 307, 337; *North Coast Water Co. (Cal.)* 26 Comm. Leaflets, 1161; see also *Rept. Comm. on Valuation*, 28th Ann. Rept. Nat'l Ass'n of Ry. Commrs., 1916, p. 197.

Various schemes to avoid rejecting appreciation and yet not include it in the valuation have been developed. Thus, in *Steenerson v. Great Northern Ry. Co.*, 69 Minn. 353, 72 N.W. 713, the return allowed on land values was reduced below that on other elements of value; in *Queens Borough Gas & Elec. Co.*, 2 P.S.C. 1st Dist. (N.Y.) 544, appreciation was treated as income; and in *Berlin Elec. Light Co.*, 3 N.H. P.S.C. 174, it was used to offset development expenses. See also *Bemis Rept. to Comm. on Gas, Oil & Elec. Light on Chicago Tel. Co.*, 1912.

limited scope and greatly modified form of the reproduction-cost inventory must be constantly kept in mind.¹

Reproduction cost is not an end in itself in the rate-making valuation. It cannot be made the sole basis of final valuation for that purpose. It is supplemental to the original cost-to-date appraisal and serves as a check upon that theory to determine the actual, justifiable, unimpaired investment.

The severe criticism of reproduction cost is largely directed toward the misuse and misconstruction of the theory. It has suffered greatly in the hands of supposedly reputable and qualified utility engineers and attorneys. No flight of the imagination has seemed too absurd to offer to the public, provided only that its acceptance would increase the rate valuation. Gigantic stock-watering schemes have been concocted under the guise of allowance for contingencies, the use of multiples, and unwarranted provision for intangible values.

Engineers have found it convenient and therefore necessary to increase the sums they could reasonably estimate on the basis of tangible property by adding a liberal allowance for contingencies² to include "all those items which it was impossible to see in making an approximate estimate of work already done" and "any items that may be overlooked."³ In the Minnesota Rate Cases this padding was

¹ Considerable stress has been placed on the incorporation of the reproduction-cost figures in the elements of value enumerated in the Federal Railway Valuation Act. The Act states no specific purpose and requires no final valuation. The reproduction-cost inventory, therefore, has a clear title to consideration. It is in rate-making valuation alone that the reproduction-cost sphere is greatly limited and the Federal Act does not confine itself to the determination of rate value.

² In considering contingencies at this point we are guilty of confusing tangible and intangible property, but consideration of the reproduction cost of tangible property cannot well be separated from consideration of parts of the closely related intangible values.

³ Testimony of Engineer W. L. Darling, Minnesota Rate Cases, Record (N.P.), p. 549. See also the evidence of J. B. Berry, pp. 739, 743; D. C. Morgan, p. 2043; J. F. Stevens (G.N.), p. 445; etc.

fixed at ten per cent, though the appraisers for the road unanimously proclaimed the allowance unjustifiably low.¹ In Michigan the same percentage, working against the roads because the valuation was for tax purposes, was equally unanimously proclaimed unjustifiably high.²

The engineer for the Commission in the Minnesota Rate Cases suggested five and a half per cent as a fair allowance for contingencies.³ Mr. Jurgensen, as chief engineer of the Minnesota Commission, allows five per cent.⁴ In Wisconsin and South Dakota five and one half per cent has been allowed and in Nebraska four per cent.⁵ Mr. A. I. Thompson, of the Federal Valuation Commission, fixes the proper contingency allowance at from one half of one per cent to two per cent,⁴ and the Washington Commission makes no allowance for contingencies.⁷

So far as the final valuation is concerned, the contingency allowance must be wholly disregarded. It represents no actual investment. It is clear conjecture, even as to reproduction cost. And it merely emphasizes the error of including appreciation and the value of donated lands. The unavoidable result of the use of such an allowance is a wider separation between fact and theory and greater difficulty in establishing successful regulation.

Mr. R. J. McFall has pointed out that the difference in valuation methods in this one item alone on the estimated \$15,000,000,000 worth of railway property in the United States would amount to the difference between \$150,000,000 and \$1,500,000,000.⁷ He might, in view of the Washington Commission's stand, have eliminated his minimum figure entirely. The contingency allowance, in other words, seeks

¹ See Record (N.P.), pp. 739-43; 1242-45; and (G.N.) p. 445.

² See also 24th Ann. Rept. Nat'l Ass'n Ry. Commrs., p. 35.

³ Testimony of D. C. Morgan, Record (N.P.), p. 1852.

⁴ 24th Ann. Rept. Nat'l Ass'n of Ry. Commrs., p. 35.

⁵ Senate Report of Valuation, No. 1290, 62d Cong., 3d Sess., p. 172.

⁶ 2d and 3d Ann. Rept. R.R. Comm. of Washington, p. 43.

⁷ *Railway Monopoly and Rate Regulation*, p. 80.

to credit the railways with \$1,500,000,000 in addition to all the value that their engineers have been able to find.

Not satisfied with this slight increase in value, the engineers conceived the idea of increasing gains by applying multiples to all or part of the value they were able and unable to discover.¹ The justification of multiples has been attempted on the theory that if the property were imagined out of existence and buildings of from two to twenty stories, according to the ambition of the appraiser, were imagined on the land, these visionary buildings would have to be destroyed to allow the reconstruction of the property; and on the theory that if the land had to be condemned again these day-dream owners of sky castles would hold out for unreasonable figures and the cost of condemnation would mount in algebraic progression.

There has been no uniform multiple worked out. There has been no agreement as to the amount of the allowance, the conditions under which it is to be made, or the values to which it is to be applied. The courts have not even agreed that the multiple should be used.

The principle is clearly fallacious. It values property in exactly the same manner that a condemnation proceeding does and then contends that because part of the land may have to be condemned, a higher rate must be allowed for all of it. It fixes a rate base higher than is necessary to attract capital into the utility field. If such a valuation were indulged in, the "worth of the service" limitation would force the rate schedule to disregard it.

¹ In Wisconsin "a multiple of one and one half has usually been applied to the market value of railroad land in cities, and in rural districts a multiple of two and one half or three has been used for this purpose. . . . It is said that in Kansas and South Dakota at the present time the multiple ranges from two to five, the average being about three outside the towns." McFall, *Railway Monopoly and Rate Regulation*, p. 108. See also Rept. Wis. Tax Comm. 1907, p. 274; Rept. Minn. R.R. & Warehouse Comm. 1908, supplement, p. 17. In Texas 25 to 50 per cent was added, in Wisconsin 10 to 150 per cent, in Washington 0 to 500 per cent, and in Nebraska 50 to 225 per cent for increased cost of land for railway use.

Justice Hughes, in considering the use of multiples in the Second Minnesota Rate Cases, said:

Assuming that the company is entitled to a reasonable share in the general prosperity of the communities which it serves, and thus to attribute to its property an increase in value, still the increase so allowed, apart from any improvements it may make, cannot properly extend beyond the fair average of the normal value of the land in the vicinity having similar character. Otherwise we enter the realm of mere conjecture . . . the allowances made below for a conjectural cost of acquisition and consequential damages must be disapproved.¹

Commissioner Shaw, of Illinois, reviews the question of land values in the light of the Minnesota Rate Cases and states what, it is believed, fairly represents the stand of a majority of the State Commissions of to-day thus:

Land owned and used for railroad purposes is of a distinctive character. Not a lineal foot of the roadway may be sold without impairment of its functions as a common carrier. . . . There is no difference between a railroad and a street upon which one may travel without charge other than the tolls collected as taxes for the improvements made upon the street, or perchance, for the bonds with which was purchased the land thus dedicated to the public use. But never is it considered that a citizen shall pay more to travel upon a street merely because the lots fronting thereon may have become of great value. The very idea is ridiculous, but it is exactly what the carriers seek when they ask a return upon increased land values. The mere fact that railroads are privately operated affects the matter not at all except to befog the issue. . . .

A railroad has nothing to sell but transportation and to such sales must it look for its profits. Land enhances in value only because its use may become more intensive. A railroad shares in the general prosperity of a community because, as the population increases, the normal use of the carrier's facilities becomes greater and its opportunity to earn more upon the original investment is

¹ 230 U.S. 352, 33 Sup. Ct. 729. The use of multiples was rejected for tax valuation in *New York, Ontario & Western Ry. Co. v. Shaw*, 143 N.Y. App. Div. 811, 128 N.Y. Suppl. 177; and in the Rept. on Revaluation of Railroads & Canals, N.J., 1911; see also *Chicago & Northwestern Ry. Co. v. Smith*, 210 Fed. 632.

correspondingly larger. This must be considered the carrier's prerogative, rather than the opportunity to include large amounts for land values which the railroad can never hope to obtain.¹

The use of multiples to determine land values is expressly rejected.

Both the multiple and contingency allowance have been excluded from the reproduction-cost appraisal by the weight of opinion in the cases decided subsequent to the Second Minnesota Rate Cases.

What, then, it may be asked, is the reproduction-cost appraisal of land values to be based upon. The Supreme Court has said market value. It has made this ruling in spite of the general belief that rate valuation must be based primarily upon unimpaired, reasonable investment, and the Court rules correctly. Reproduction cost does not and cannot determine investment, therefore it cannot serve as a rate base. It seeks to determine the investment that would have to be made if the rate base investment had not been made. That figure for land is the market value. The market value includes appreciation, it includes donated land, and it includes reinvested surplus. All these elements admissible or inadmissible for the final valuation are legitimately included in the reproduction-cost appraisal. That is why the claim for a final valuation on the reproduction-cost basis was doomed to failure from the start. Reproduction cost cannot serve to show a final rate value, but it does supplement the original-cost appraisal, serve as a check upon it, and aid greatly in the estimate of value of the service.

IX. *Valuation of Buildings*

Much the same problems that arise in connection with the valuation of land are met with in the appraisal of buildings. Conjectural allowances by means of "average struc-

¹ Chicago, Milwaukee & North Shore Electric Ry. Co. (Ill.) P.U.R. 1918-A-388.

tures,"¹ etc., have been used as short cuts, and the contingency allowance has been freely granted. Such practices are less reprehensible here only because the amounts involved are smaller.

The actual investment in building may be determined with comparative ease when the date of construction is known. Prices of material and labor as of the date in issue are readily ascertainable, so the appraisal is reduced to a mere mathematical problem. Where there is no evidence of the date of construction the value of buildings has been fixed by averaging the cost of reproduction new and the actual-cost estimate.²

Difficulty is encountered in applying this method of appraisal, however, where existing buildings have been adapted to a use other than that for which they were constructed. In such cases the worth of the service rendered by the building is clearly not equivalent to the investment therein. The building has depreciated in value for rate-making purposes in addition to its physical depreciation. The investment has been seriously impaired. The worth of the service, being out of harmony with the cost of service if the theory of impaired investment is rejected, predominates. Valuation in such case seeks to determine the worth of the service rendered, on the theory that it is equivalent to a fair return upon the unimpaired reasonable investment; and that should the former figure prove the smaller it would necessarily predominate.

Where a building is used only in part for the utility service or, in case of dual service, for that service in question, only that portion of the value used and useful in rendering the particular service can be included in the rate valuation. Structures erected far in excess of present needs can be valued only to the extent of the present use; but ade-

¹ Second Minnesota Rate Cases, Record (N.P.), p. 41, 3207-47. Morse, "Valuation by Approximation," *Utilities Magazine*, Jan. 1914, p. 183.

² *Taylor v. Northwest Light & Water Co.* (Idaho), P.U.R. 1916-A-372.

quate provision may properly be made for growth in the immediate future. Buildings owned but not used must be wholly excluded. And all structures must be depreciated to their present value.

X. *Water Rights*

Consideration of water rights seems properly treated in connection with the valuation of tangible property. They are of two types, those rights arising from the ownership of, or easement in, the land, and those based on contract. Consideration of the latter should present few difficulties.

A valuation for rate-making purposes seeks to determine the reasonable, unimpaired investment. A water-right contract which does not create an easement, but simply provides for the purchase and sale of water at a fixed rate, represents no investment.¹ The money paid under such a contract is assumed to represent the fair value of the service or commodity secured. It is an operating expense, not a capital charge. If it is assumed that payment is made in addition to, or in excess of, the reasonable value of the service, the added expenditure represents an unjustifiable investment not used or useful. Such an investment cannot form a part of the rate base. The savings effected by the contract should secure their reward by way of recognition of efficient management in fixing the rate of return. In a purchase-and-sale case such a contract may be properly valued to the extent of its probable effect upon the rate of return, the advantages of operating without a capital investment, and such other similar items as may give it a market value.

There is, it is true, a line of decisions holding that the advantages from such a contract constitute a value that is properly included in the rate base.² It is suggested, however,

¹ *Greensburg v. Westmoreland Water Co. (Pa.)* P.U.R. 1917-D-478, 533.

² *Bonbright v. Corporation Comm. of Arizona*, 210 Fed. 44, reversing

that these cases confuse market value with rate value and may properly be disregarded.

The case is somewhat different where the utility has purchased an easement or acquired riparian rights. Such rights represent an actual investment, an expenditure in advance of receipt of the service and usually not proportionate thereto. They constitute a proper capital charge,¹ to be amortized from income during the life of the right.

Valuation of this type of water rights has been forcibly made to appear a vexing problem. Most of the difficulties have been introduced by befogging the distinction between original cost, reproduction cost, and final value. The original cost of such water rights, assuming their reasonableness, is the amount actually expended in securing them. The reproduction cost is the fair market value of the right or the sum that would have to be expended at the present time to secure the rights. In the case of water rights accruing by reason of ownership of land, the cost of the right is merged in that of the land² and the original cost is included in the investment in the property, the reproduction cost is the market value of the land.

the opinion of the Commission that a contract was not a proper capital charge; *City of Ely v. Ely Light & Power Co.* (Nevada), 24 Comm. Leaf. 578; etc.

¹ *San Joaquin & K.R. Canal & Irrig. Co. v. Stanislaus County*, 233 U.S. 454, 58 L. ed. 1041; *Public Service Comm. v. Pacific Power & Light Co.* (Cal.) P.U.R. 1915-A-88, 96; *Peck v. Indianapolis Lighting & Heating Co.* (Ind.) P.U.R. 1916-B-445; *Portland R. L. & P. Co.* (Or.) 1916-D-976; *Apple v. Brazil* (Ind.) P.U.R. 1915-C-561; *Marin Municipal Water Dist.* (Cal.) P.U.R. 1915-C-433. See also *Re City of Santa Cruz* (Cal.) 1915-F-768, where such value was allowed in a valuation for purchase by the municipality.

² *Re San Lorenzo Water Co.* (Cal.) P.U.R. 1915-D-1091; *Re City of Redondo Beach* (Cal.) 1915-B-429; *Campbell v. Hood River Gas & Elec. Co.* (Or.) P.U.R. 1915-D-855; *Portland Railway L. & P. Co.* (Or.) P.U.R. 1916-D-976. Percolating and storm waters valued with land, *San Gabriel Valley Water Co.* (Cal.) 1916-B-895; and *Marin Municipal Water Dist.* (Cal.) P.U.R. 1915-C-433. The Idaho Commission has used the original method of valuing the land with the water right, *Sandpoint Water & L. Co.* (Idaho) P.U.R. 1915-F-445, 457.

The final valuation must represent the unimpaired, reasonable investment in that portion of the water rights which is used or useful in rendering the public service. Excessive provision for the future must be excluded, and, in the absence of statute to the contrary, undeveloped water power must be disregarded.¹ And where the rights are the result of government franchise only the amount actually expended in developing the rights can be capitalized.²

An ingenious scheme to reap rich profits from water rights for power use was developed in the earlier valuation cases. Utility advocates argued that the fair value of a water right was the capitalized saving from the use of water power as compared to steam power. In commenting on this theory, in Grafton County Electric Light and Power Company,³ Commissioner Niles held that such evidence should not be regarded as important, because the test of value is not the profitable use which can be made of the powers in the particular public service, but the market value of the right, taking into account both supply and demand. To allow any class of property used in the public service to be capitalized at more than its actual market value, the Commissioner pointed out, would produce the absurd result of establishing for public service corporations a higher basis of capitalization than for corporations of a purely private character.⁴

¹ Portland Ry. L. & P. Co. (Or.) P.U.R. 1916-D-976.

² East Bakersfield Improvement Association v. San Joaquin Light & Power Corp. (Cal.) P.U.R. 1916-C-830. Thayer v. Beaver Valley Water Co. (Pa.) P.U.R. 1916-E-962.

³ New Hampshire Pub. Serv. Comm. P.U.R. 1916-E-879, 919.

⁴ While *Re Grafton County Elec. Light & Power Co.* is a purchase-and-sale case, the remarks are applicable to the reproduction-cost appraisal rate-making, since market value is sought in both instances. The Commission said in part: "We cannot admit that there is any compulsory method of determining the value of a water power. . . . Its saving to the owner over some more expensive method of power production does not measure its selling price, or value, any more than the cost-of-reproduction method determines the value of physical structures, simply because, as a matter of fact, water powers are not valued and do not sell upon that

The Vermont Public Service Commission, in considering the saving-over-coal method of valuing water rights in Montpelier and Barre Light and Power Company,¹ disapproved that method of valuation as a basis for securities issues because it creates a value which may be largely in excess of the actual value of the rights, and when applied to rates deprives the consumer of all benefits from natural resources.

The Oregon Public Service Commission rejected the saving-over-coal method in Portland Railway Light and Power Company,² because the value sought under that theory depends upon a capitalized saving, and the cost of operation varies with the market prices; to measure by this theory, therefore, would be to measure with a variable. Its acceptance would deprive the community of one of its

basis. And the objection of the Supreme Court to the conjectural character of the cost-of-reproduction method applied with equal force to the 'saving-over-coal' method of valuing water powers. It assumes, what is not proved, that power could be produced profitably by coal. And it assumes, what is not true, that a given amount of power produced by water, varying in amount as it will on even the best regulated streams, is equal in value to a like amount of power generated by steam, constant and reliable at all times. . . . One feature of the 'saving-over-coal' method of determining the value of a water power should not escape attention. We live in a region remote from the coal fields, the cost of transportation is heavy, and the price of coal is higher than in almost any other part of the country. On the other hand, ours is a mountainous State, with many streams having a large fall and furnishing an abundance of water power, much of which is still undeveloped. If we adopt the policy of valuing water power in rate and capitalization cases by capitalizing their saving over coal, the people of the State are left subject to all the disadvantages attendant on remoteness from the coal mines, while enjoying no advantage from living in a region abundantly supplied with water powers." See also Grafton County Electric Light & Power Company (N.H. Sup. Ct.) P.U.R. 1917-E-345, 353; Ocean County Electric Company (N.J.) P.U.R. 1916-D-77; and Berlin Electric Light Company 3 N.H. P.S.C. 174; San Joaquin Light & Power Corp. *v.* Railroad Commission (Cal. Sup. Ct.) P.U.R. 1917-E-37, 41; Public Service Commission *v.* Pacific P. & L. Co. (Wash.) P.U.R. 1916-B-86, 93; Rhinelander *v.* Rhinelander Lighting Co. 9 W.R.C.R. 406.

¹ P.U.R. 1916-B-973, 976.

² P.U.R. 1917-D-962, 971.

natural resources and permit the capitalization of that resource for the sole benefit of an individual.

The fallacies of the saving-over-coal theory are set forth in the cases cited. It has no proper sphere in valuation. It does not show original cost. It does not determine market value or reproduction cost because it considers only the supply, not the demand side. It is conjectural. And it defeats regulation by granting public service companies a higher basis of capitalization than private industries enjoy.

XI. *Pavement over Mains*

The question of capital charges for cutting and replacing pavements over water and gas mains and services and electric ducts plays a comparatively unimportant part in the original-cost appraisal. Only paving actually cut and replaced in the installation of mains is involved, and the expenditures for this work represent necessary and unavoidable investment.¹

The reproduction-cost appraisal, however, raises the question of the propriety of allowing in rate valuations for paving not actually cut and replaced, but which would have to be cut if the plant were to be reconstructed under present conditions. The strict theory of the reproduction-cost appraisal if adhered to would include such costs. But for reasons already stated reproduction cost cannot be used without modification for rate valuation even as an appraisal theory. The reproduction cost appraisal is not an end in itself. It serves only as a check upon and supplement to the original-cost-to-date estimate, not as a substitute for that appraisal. The form of the reproduction-cost appraisal must be fitted to the limitations placed upon its use. The cost of cutting and replacing pavement, therefore, can be included in the estimated cost of reproduction only when

¹ The Commissions' decisions are unanimous in allowing for paving actually cut.

the paving was actually cut.¹ To hold otherwise would incapacitate the reproduction-cost appraisal for the service it must perform because it would result in figures neither a check upon nor supplemental to original cost. Such figures can have no place in the final valuation.

Justice Day, of the United States Supreme Court in considering this question in the *Des Moines Gas Case*,² said:

These pavements were already in place. It may be conceded that they would require removal at the time when it became necessary to reproduce the plant in this respect. The master reached the conclusion that the life of the mains would not be enhanced by the necessity of removing the pavements, and that the company had no right of property in the pavement thus dealt with, and that there was neither justice nor equity in requiring the people who had been at the expense of paving the streets to pay an additional sum for gas because the plant, when put in, would have to be at the expense of taking up and replacing the pavements in building the same. He held that such added value was wholly theoretical, when no benefit was derived therefrom. We find no errors in this disposition of the question.

This ruling has been followed by all the commissions.

Cost based on undisturbed paving, despite the claims of reproduction-cost advocates, has no place in a valuation for rate-making purposes. It has been argued, however, that mains laid under pavement are intrinsically more valuable than those in unpaved streets because the greater the extent

¹ The Commissions of California, Illinois, Indiana, Missouri, New York, Ohio, and Wisconsin have repeatedly held that paving not actually cut cannot be included even in the reproduction-cost appraisal. Commissioner Maltbie, of New York, expressed the State Commission's stand in *Mayhew v. Kings County Lighting Company*, 2 P.S.C. (N.Y. 1st Dist.) 659, thus: "In other words, every time the streets are improved, not only do taxes or assessments go up, but higher gas rates are justified, notwithstanding the fact that the company may not have paid one dollar in connection therewith. If this theory is correct, citizens must consider in connection with every civic improvement its effect upon rates for gas, electricity, telephone service, water, transportation, and every other service which involves the use of the subsurface of the streets."

² *Des Moines Gas Company v. Des Moines*, 238 U.S. 153, P.U.R. 1915-D-589, 590, 59 L. ed. 1244.

to which a distribution system is located under paved streets, the greater would be its value, in the eye of a purchaser.

This argument is fallacious in assuming that rate value must include all elements making up purchase value. Rate value attempts to determine value as an element in cost of service, and uncut paving cannot in any conceivable manner affect cost of service. The conclusion of the argument is, moreover, as erroneous as the premises. A statement that the value of mains laid under pavement is in general less than that of those over which there is no pavement would probably have been more accurate. Repairs to mains, services, and ducts become more difficult and costly after paving is laid; connection of services is more expensive; greater time is required for making emergency repairs and improvements; property owners having frontage on the street disturbed are aggravated; special permits have to be secured; and innumerable similar disadvantages add to the cost of utility service where the mains lie under paved streets.

The issue is, What is the unimpaired investment in mains upon which the stockholder can reasonably expect a return for his sacrifice.¹

XII. *Summary*

Valuation of the tangible property of a utility for rate-making seeks to determine the actual, reasonable, unimpaired investment in that portion of the tangible property which is used or useful in rendering the public service. Property acquired without cost cannot be included in the final valuation because it is not investment and represents no sacrifice for which the stockholder is entitled to a return. Property acquired from surplus is properly included in a

¹ It is commonly held that the cost of uncut paving is not a proper charge in a valuation for purchase and sale. *Appleton Water Works Company*, 6 W.R.C.R. 97, 122, *Affd.* 154 Wis. 121; *Manitowoc Water Works Company*, 7 W.R.C.R. 71; *Oshkosh Water Works Plant*, 12 W.R.C.R. 602; etc.

rate valuation, though the Commissions are not agreed upon this point. Land should be valued at its cost in the original-cost appraisal and at the market value of similar neighboring real estate in the reproduction-cost estimate. The final valuation must be premised upon the investment as in the case of other tangible property.

Buildings upon the land unsuitable for utility purposes and removed add to its value the cost of removal less their salvage value. But the reproduction-cost appraisal must be limited in this regard to actual conditions at the time of purchase to exclude conjectural results and fit the reproduction-cost estimate to serve as a check upon and supplement to the original-cost appraisal.

Contracts for water service are not capital charges, but easements and water rights vesting with the title to the land are and must be included in the valuation for rate-making or for purchase and sale. Here too the attempt is to determine investment, but the market value of the right is properly included in the reproduction-cost appraisal. The saving-over-coal theory of water-rights valuation is improper in all cases.

Pavement over mains is legitimately valued for rate-making when the pavement was actually cut and properly replaced. But such costs are not properly included, even in the reproduction-cost appraisal where the pavement was laid after the mains were placed. There has been no real investment in such cases and valuation seeks primarily to determine investment.

CHAPTER VII

VALUATION OF INTANGIBLE PROPERTY

I. *Overhead Charges*

The most disputed field in public-utility valuation is the allowance for intangible values, and the most mooted question that of overhead expenses. The bare construction cost of the physical plant and equipment does not include all the justifiable actual capital expenditures of the company. Funds are legitimately spent in prospecting in an undertaking of any magnitude, in determining the possibilities for profit and the risks in the undertaking. The project can seldom be carried out without considerable expenditures for promotion and financing. Engineering and legal advice are always necessary and the fees therefor usually are a proper capital charge. Working capital must be provided. Interest must be paid on the investment up to the time operations are started, taxes must be met, and insurance carried from capital funds till income begins. And there are numerous other similar charges any or all of which may have to be met. Such expenses, when reasonable and not a mere increase in the interest on the funds invested, or a part of the operating expenses, represent actual necessary investment in property used and useful in rendering the utility service, and are properly included in the valuation.¹

Overhead expenses must be met in the original construction of the plant; but in making the original-cost inventory it is often found that a large part of the expenditures of this nature have been entered on the utility company's books with the physical items to which they attach, as capital or in the operating accounts. In such cases a separate

¹ The State Commission decisions without exception allow for overhead expenses actually incurred in the original-cost appraisal and those reasonably necessary in the reproduction-cost appraisal.

allowance for these items would result in duplication, and create a capital charge representing no actual investment. Aside from liability of duplication, the original-cost appraisal presents few difficulties.

The reproduction-cost estimate, however, raises numerous questions as to overhead allowances. It permits in general of much higher overheads than the original-cost appraisal. The items are conjectural, and it seems to be the rule that engineers who submit high valuations of the physical property also surcharge the thus already high appraisal with an undue percentage to cover overhead expenses. The following list of overhead items suggested by an engineer in a case before the Illinois Public Utilities Commission,¹ is not exceptional:

1. Under organization costs —

- (a) Cost of preliminary business investigation and negotiations.
- (b) Expert preliminary engineering reports in the general character and cost of proposed system.
- (c) Incorporation costs including charter fees and cost of issuing and selling stock.
- (d) Legal advice.
- (e) Special engineering investigations for source of water supply.
- (f) Cost of sinking test wells and pits.
- (g) Cost of determining density of population and of probable motor and light load.
- (h) Cost of optioning real estate.
- (i) Cost of printing and issuing bonds and arranging for their sale.
- (j) And, in general, all cost incident to putting enterprise on a definite basis up to the point where detailed plans can be prepared and actual construction begun.

2. Under engineering and superintending costs —

- (a) Salaries and expenses of engineering and superintending force.

¹ *Lincoln v. Lincoln Water & L. Co. Valuation* by Maury. I.P.U.C. No. 2496 P.U.R. 1917-B-1.

- (b) Preparation of detailed plans.
- (c) Preparation of specifications.
- (d) Preparation and letting of contracts.
- (e) Setting of lines and grades.
- (f) Inspection of work.
- (g) Estimates for contractors.
- (h) Purchase of material and supervision of labor where work is not done by contract.
- (i) Final tests and adjustment of contracts.
- (j) The placing of the plant in successful operation.
- 3. Under general administrative and legal costs —
 - (a) Salaries of general officers.
 - (b) Salaries and expenses of office assistants.
 - (c) Cost of accounting.
 - (d) Legal advice.
 - (e) Rent and office expense.
- 4. Under general contingent cost during construction —
 - (a) Changes in construction due to unforeseen obstacles developed during the progress of the work.
 - (b) Rise in prices of material or labor above normal.
 - (c) Financial panics.
 - (d) Inclement weather causing delays.
 - (e) Floods causing both an actual property loss and unavoidable delays.
 - (f) Failure of contractors.
 - (g) Especial unforeseen difficulties encountered in deep excavations.
 - (h) Strikes.
 - (i) Litigation.
 - (j) Taxes and assessments on real estate and personal property for two years.
 - (k) Insurance.
 - (l) Cost of temporary drive wells and pumping plant to supply the city before the permanent plant is completed.
 - (m) Cost of selling construction bonds, including commission or discounts.
- 5. Under interest construction —
 - (a) Being 6 per cent interest on the moneys expended progressively for construction until the plant begins operation and such charges may be carried in the operating accounts.

It is, of course, inconceivable, even in the face of the serious suggestion of the appraiser, that all these overheads should be encountered in the actual construction of each plant. Clearly all should not be included in the hypothetical reconstruction. An inventory based on possible or even probable overheads rather than those actually encountered would produce the conjectural appraisal rejected in the Minnesota Rate Cases. If it were seriously contended that such overlapping and exaggerated expenses would be actually encountered, the resultant figure would have to be excluded from the rate base in any case, for only the reasonable cost can be considered. Mistakes in judgment, unnecessary duplication, and unwarranted expenditures form no part of the value for rate-making. Such an appraisal would lead to a reproduction-cost appraisal unfit to fulfill its purpose in valuation. It should serve as a check upon and supplement to the original-cost appraisal, and to enable it to do this the overheads allowed must be based upon fact, not imagination.¹

It is necessary in determining a reasonable allowance for overhead expenses to consider the general characteristics of a property and the efficiency of its operation. Overhead expenses, to a large extent, represent skill, judgment, and ingenuity during the preparatory and construction period. That skill and judgment should have been paid for in proportion to value received, and would have to be so paid in case of reproduction if the payments were to be properly included in the valuation for rate-making purposes. This is particularly true in regard to engineering and supervision. If the usual fees for such services are to be allowed, the results of the service should be apparent. A five per cent allowance seems small, but it must be remembered that a claim for engineering, amounting to five per cent of the total tangible property, is equivalent to a far greater percentage

¹ *Herman v. Newton Gas Co.* (N.Y. 1st Dist.) P.U.R. 1916-D-825; *Mantua Twp. v. New Jersey Gas Co.* (N.Y.) P.U.R. 1916-C-163; etc.

on the items which actually require engineering attention. Five per cent, therefore, is a very remunerative fee for either engineering or supervision. A plant constructed piecemeal during a long period cannot be valued for rate-making with the same allowance for overheads as a plant constructed as a single unit on definitely worked-out plans. Large percentages for overheads can be allowed only when the property is very compact, exceptionally efficient, and highly suitable for present-day requirements.

1 Much of the conjectural element in reproduction-cost appraisals has been needlessly drawn into valuation work by the failure of appraisers to recognize or acknowledge the difference between the appraisal and the estimate; between determining the cost of reproducing a plant of known character under fixed conditions and estimating the cost of producing a plant of similar character. The reproduction-cost appraisal involves no real construction. The whole process is purely imaginary. The items which make up the property are before the appraiser and susceptible of absolute determination. The conditions under which those items are to be installed are definitely and exactly prescribed. In the estimate of construction cost the material to be used is conjectural, depending upon unforeseeable contingencies developing during the process of construction. The conditions of installation cannot be foretold with absolute accuracy. The uncertainty involved necessitates a contingency allowance and liberal overheads where actual construction along variable lines is contemplated. Engineers have almost invariably applied estimate methods to the appraisal, and widened the gap between original and reproduction cost.

In either the original-cost or reproduction-cost appraisal the allowance for overhead must be made upon the depreciated value of the property, or the allowance itself be depreciated to arrive at present value or unimpaired investment.¹ If such allowances were not depreciated or amortized

¹ Washington & M. R. Co. (D.C.) P.U.R. 1915-B-558; Campbell *v.*

a capital charge would remain and receive a return from rates after the investment had ceased to be used or useful. Depreciation rather than amortization is the remedy, for the expenditures are a capital charge.

II. *Organization Expenses*

The first overhead charge encountered is organization expense. It includes all the expenditures necessary in bringing about the decision to undertake the enterprise. The law holds the utility responsible for all mistakes in judgment, poor location, over-construction, faulty organization, etc., and allows only a fair rate on a reasonable capitalization irrespective of actual investment. The utility, therefore, is justified in making any reasonable outlay for salaries of officials engaged in bringing men and material into the industry, the preliminary expenses connected with prospecting, determination of the demand for service and probable number of consumers, the quality of service desired, ascertaining operating conditions, availability of water power, fuel, etc., securing options on suitable property, determining the cost of construction, and paying for corporate organization, office expenses, legal services, etc. These expenditures constitute actual, necessary, and useful investments. The propriety of including such sums in the valuation cannot be questioned. The State Commissions have universally allowed such elements of value. But the California Commission has rejected organization expenses incurred in connection with the building-up of a predecessor company on the ground that such expenses were of no benefit to consumers of the existing company.¹

Hood River G. & E. Co. (Or.) P.U.R. 1915-D-855; Portland R. L. & P. Co. (Or.) P.U.R. 1916-D-976; Rates of Missouri So. R. Co. (Mo.) P.U.R. 1916-C-607; Re Central P. R. Co. (Cal.) P.U.R. 1916-B-845; Re Los Angeles (Cal.) P.U.R. 1916-F-563; Mountain States T. & T. Co. (Col.) P.U.R. 1917-B-198. *Contra*, see Lima v. Lima T. & T. Co. (Ohio) P.U.R. 1916-E-670.

¹ Salinas City v. Coast Valley Gas & Elec. Co. (Cal.) P.U.R. 1915-B-460.

III. *Promoters' Profits*

Organization costs, however, must be distinguished from promoters' profits. The State Commissions are by no means agreed upon the propriety of including such expenditures in the valuation. There would seem to be little room for dispute, so far as the theory of such expenses is concerned, though there is ample room for confusion in practice. The promoter performs a necessary and useful function. Without his efforts the undertaking would often be impossible. Neither the consumers nor the investors are equipped to perform the promoter's task. If either undertook it, the work would be faultily performed at a greater expense, if accomplished at all; and the resulting organization in nine out of ten cases would be less stable. The promoter assumes risks relatively large and intense. His return must be proportionately great. Ability of the highest order, good standing, and financial backing are required and must be paid for. His reward for service and risk represents real investment, beneficial to the company if necessary under the circumstances, whether it was paid for with stock or money. The past, however, has been replete with examples of unscrupulous, unwarranted if not illegal, promotional speculations. A limitation, therefore, must be placed upon such allowances. Promoters' profits can be included in the valuation only upon a showing of reasonable necessity and a resulting benefit to the service.¹

IV. *Interest during Construction*

A public-utility plant cannot be constructed in any brief space of time. The material and labor must be collected,

¹ *Edwards v. Glen Tel. Co.* (N.Y. 2d Dist.) P.U.R. 1916-B-940; *Bay State Rate Case* (Mass.) P.U.R. 1916-F-221; *Pine Lawn v. West St. Louis Water & L. Co.* (Mo.) P.U.R. 1917-B-679; etc. Such expenses are excluded in case of financing of a subsidiary company by the parent utility. See *Herman v. Newton Gas Co.* (N.Y. 1st Dist.) P.U.R. 1916-D-825; *Chesapeake v. P. Tel. Co.* (Md.) P.U.R. 1916-C-925; *Mountain States T. & T. Co.* (Col.) P.U.R. 1917-B-198; etc.

plans drawn, and months spent in actual construction work. The funds employed in this work draw no return prior to the date of operation. The capital invested is necessarily idle, and produces no return. The investor makes a real sacrifice in foregoing interest during that period, and the interest foregone during construction, organization, etc., up to the time of operation is a necessary and legitimate part of the construction expense. Such charges represent an actual investment, used and useful in the utility business. They have added to the sale value and the productive value of the property, and the State Commissions, without exception, hold that within reason interest during construction is properly included in the valuation.

Interest during construction as a capital charge is limited, however, to a reasonable amount.¹ Two issues are presented:

(1) What is the fair rate of interest? (2) What, under the actual circumstances involved, is the proper length of time during which interest is to be allowed?

The rate of interest fixed cannot be the same in every case. Even if the current rate under similar risk is accepted as the gauge, the sum will vary in different sections of the country. But that rate cannot properly be accepted as the guide outside the reproduction-cost inventory. The actual rate at which the utility was able to borrow must govern whenever it can be ascertained, and it always can be when notes or bonds were issued.

The question of the length of time during which interest is to be allowed is equally important in the reproduction inventory. The best that can be produced, and all that the reproduction estimate demands, is a fairly accurate guess. The economist who demands absolute figures to the exclusion of all estimates and generalities in the reproduction

¹ *Petaluma & S. R.R. Co. (Cal.) P.U.R. 1915-C-742*; *Columbia v. Watts Engineering Co. (Mo.) P.U.R. 1915-B-921*; *Lincoln v. Lincoln Water & L. Co. (Ill.) P.U.R. 1917-B-1*; etc.

inventory advocates a utopian appraisal that disclaims all familiarity with actual valuation practice. The reproduction inventory is an estimate based on supposition, not fact, limited along many lines to prevent too wild flights of fancy, but a guess at best. It claims to be no more. Value is itself but an estimate, and commercial appraisal embraces all the irregularities of regulative valuation. Unquestionable figures cannot be expected in the reproduction-cost inventory. The length of time necessary to reconstruct the hypothetical plant under arbitrarily assumed conditions at equally arbitrarily averaged prices must be estimated. To make the estimate, a rate of construction must be assumed which must in turn be governed by the conditions accepted as prevailing, the size and character of the plant, the surrounding conditions, etc.¹ When the period of construction is assumed to be less than a year, it is generally taken for granted that the whole sum needed in the work will be procured before operations are begun and interest is allowed for the entire construction period. But when the properties are large and the period of plant construction is estimated to extend over several years, it is universally assumed that the funds will not all be provided in advance of operations. Actual conditions are approximated by assuming that half of the money is required for the full construction period, or that all of the funds are required for half of that time; and the interest is figured accordingly.² Six per cent has been a common allowance for interest.

¹ All this guess-work is of course deplorable and would be truly dangerous if the reproduction inventory had not been discredited. Yet as a check such an appraisal is valuable. It is on just such estimates as this that purchase and sale are based in the unregulated industrial world, and ordinary cost accounting for price-making rests upon such untrustworthy valuations.

² *State Journal Printing Co. v. Madison Gas & E. Co.*, 4 W.R.C.R. 501; *Mayhew v. Kings County Lighting Co.*, 2 P.S.C. (1st Dist. N.Y.) 659; *Meek v. Consumers' Elec. L. & P. Co. (Mo.)* P.U.R. 1915-A-956; *Washington & M. R. Co. (D.C.)* P.U.R. 1915-B-558; *Columbia v. Watts Engineering Co. (Mo.)* P.U.R. 1915-B-921; see valuation in *Minnesota Rate Cases*, 184 Fed. 765; etc.

The rate of interest which the funds accumulated for construction purposes could earn as average balances on deposit against a checking account or certificates of deposit may properly be figured as a set-off against the claim for interest during construction. Such a charge may be estimated on the half-year basis in the same manner that the item it is balanced against is computed.

Taxes must be paid on real estate and personal property even before construction work is started. Like interest they constitute a legitimate capital charge, and are properly included in the valuation¹ in the amount paid up to the time that operation starts; and they may be cared for as an operating expense. The amount of this charge may be computed with fair accuracy, even in the absence of complete records, from the local tax rate, capital-stock tax, mortgage tax, etc., all of which may be readily learned.

Fire, casualty, and other insurance on the plant and equipment during the pre-operating period, like taxes and interest, must be met from capital; and the sums thus expended may properly be included in the valuation as a sacrifice or necessary investment in property used and useful in rendering the service.²

V. *Engineering and Superintendence*

The public utility in the process of construction must make multitudinous expenditures for architectural assistance and engineering advice, designs, drafts, plans, and the numerous matters involved in construction engineering. The architect must prepare and submit preliminary studies, drawings, specifications, and detailed drawings; and must supervise the work itself. Engineering and superintendence expenditures necessarily begin at the earliest conception

¹ Re Metropolitan St. Ry. Co. Reorganization, 3 P.S.C. (1st Dist. N.Y.) 113; *Columbia v. Watts Engineering Co.* (Mo.) P.U.R. 1915-B-921; *Racine Water Co.* (Wis.) P.U.R. 1917-D-277.

² Re Metropolitan St. Ry. Co. Reorganization, 3 P.S.C. (1st Dist. N.Y.) 113; *Roundup v. Roundup Coal Min. Co.* (Mont.) P.U.R. 1916-D-393.

of the undertaking and precede the actual start of construction. They continue until the construction work is completed. The interest of both the investor and the public demand that competent engineering and superintendence service be secured to guarantee efficiency and economy. The reasonable expenditures for these services, therefore, are properly made a part of the regulatory valuation.¹

Where the original cost of engineering can be ascertained, these figures should control over any hypothetical reproduction-cost estimate, for they show the real investment. When reproduction cost is sought, resort is had to the percentage allowance. This method has been severely criticized, but in most cases the critic has lost sight of the fact that the guess occurs in an appraisal which is itself but a guess, and not in the final valuation. The use of percentage allowances for these particular items is, in fact, more justifiable than elsewhere, for both architects and engineers in actual practice figure their fees on the percentage basis. The appraiser merely substitutes his percentage figures for those of the imaginary engineer. The percentage used by the State Commissions has varied, but it is suggested that the divergency is no greater than that which would appear in actual practice in the figures of several engineers; and regula-

¹ The State Commissions' decisions are unanimous in making allowance for reasonable engineering and superintendence charges, but there is some disagreement as to the form of the allowance. The point has been raised that engineering and architectural expenses are not involved in connection with every form of property. See cases excluding engineering expenses on specified items such as furniture, fixtures, tools, teams, meters, etc. *Simms v. Columbia Tel. Co.* (Mo.) P.U.R. 1915-C-366; *Re Racine Water Co.* (Wis.) P.U.R. 1917-D-277; *Cripple Creek Water Co.* (Col.) P.U.R. 1916-C-788; etc. The general percentage allowance, however, has been uniformly applied in a majority of cases because that is the form of engineering and architectural fee actually used in the industrial world. While greater accuracy, at first glance, seems available by limiting these charges to the items actually affected, it is doubtful whether such is actually the case. If the reconstruction were real rather than hypothetical, the fee would have to be paid on the percentage basis. To estimate on any other basis, therefore, is theoretical and the burden of proving the advantage rests upon the advocate of the change.

tory appraisal on the reproduction-cost theory can scarcely be held to a higher degree of accuracy than industrial valuation permits. It must be remembered, too, that if any degree of accuracy is to be claimed for the appraisers' estimate the allowance must vary. A much smaller percentage for engineering and superintendence will suffice in the construction of a simple plant than in one involving feats of engineering; and an engineer will undertake the work of a large plant on a less percentage than that of a small one because the total figure will be greater. Piecemeal construction and similar conditions must be considered, too, in determining the percentage to be allowed, and it may be hazarded that, all things considered, the determination of the engineering allowance may prove to be the province of the engineer rather than that of the economist.

VI. *Contractors' Profits*

The question of contractors' profits has created more discussion in valuation theories than allowance for promoters' profits. The problem does not arise in the original-cost appraisal, for such profits as were incurred are usually merged with the property items and entered on the books. But the reproduction-cost appraisal opens the way for watering accounts through this channel. The appraiser, assuming that if the plant were to be reconstructed a general contractor would be employed to do the work, creates a basis for application of a contractors' profits percentage to all items. Such a hypothesis may be excusable, in theory, but here as elsewhere the reproduction-cost appraisal must be restrained by the sphere it occupies in valuation. To avoid the charge of being conjectural within the prohibition of the Second Minnesota Rate Cases, the allowance must be limited by the facts of the case. Contractors' profits can be allowed where they were an expense justifiably incurred, i.e., where the utility had reason to believe that it would be more economical for it to let the work out to a contrac-

tor than to undertake it itself and where it actually did let it out.¹ The general policy of the commissions has been to exclude such expenditures as a separate item.² It is not always necessary, customary, or advisable for a utility company to employ a general contractor for its construction work. And it is seldom expedient for the company to retain such a contractor throughout the entire construction period. It is customary to construct additions and betterments and make purchases, after construction is well under way, by dealing directly with the sub-contractors and eliminating the general contractor's profit. Clearly, therefore, no general contractor's profit allowance can be properly included in the valuation in the absence of direct evidence that such expenditures were incurred and reasonably incurred.

When an allowance for contractors' profits is made, it must be based upon a theoretical value reduced from normal by the savings which have made the employment of the contractor justifiable. Such an allowance cannot properly be made where the value approximates the actual construction cost of the plant created without the aid of the contractor, and therefore without the assumed economy.

VII. *Discount on Bonds*

When a public-service company is organized, it is commonly necessary to secure funds in addition to those derived from the sale of stock. This is done by bond issues. And the securities are floated with the aid of an underwrit-

¹ Ocean County Gas Co. (N.J.) P.U.R. 1915-B-601; Washington & M. R. Co. (D.C.) P.U.R. 1915-B-558; etc.

² Lincoln v. Lincoln Water & L. Co. (Ill.) P.U.R. 1917-B-1; Corona v. Corona Home T. & T. Co. (Cal.) P.U.R. 1915-F-1014; Herman v. Newton Gas Co. (N.Y. 1st Dist.) P.U.R. 1916-D-825; Rept. St. Louis Public Service Comm. on Electric Rates, 1911, p. 45; Metropolitan St. Ry. Reorganization, 3 P.S.C. 1st Dist. N.Y. 113; Berlin Electric Light Company, 3 N.H. P.S.C. 174; etc.

ing firm. The underwriters guarantee to place the securities on the market and dispose of them within a fixed time at a stated price sufficiently below the market price to repay the guarantors for their work. The securities as actually disposed of in such cases are subject to a joint discount, part brokerage, part deferred interest.

It has been the contention of the utility that brokerage is "the expense necessary to be paid a reputable broker for making a full and complete investigation into the cost and prospects of an inviting public-service enterprise and a reasonable compensation for inducing his clientage to invest in well-secured bonds and securities of such corporation," and therefore that it is a necessary expense quite similar to engineering and superintendence and to be valued on the same basis. The State Public Utility Commissions have as a rule adopted a contrary theory.¹ Bond discount,

¹ Public Service Comm. ex rel. *Seattle v. Seattle Lighting Co.* (Wash.) P.U.R. 1915-B-135; *Terminal Taxicab Co.* (D.C.) P.U.R. 1915-B-546; *Camara de Comercio v. Manila Elec. R. & L. Co.* (P.I.) P.U.R. 1915-D-977; *Campbell v. Hood River Gas & E. Co.* (Or.) P.U.R. 1915-D-855; *Blue Hill St. R. Co.* (Mass.) P.U.R. 1915-E-370; *Lima v. Lima T. & T. Co.* (Ohio) P.U.R. 1916-E-670; *Re Dunham* (Mo.) P.U.R. 1916-E-544; *Re Citizens' Tel. Co.* (Ind.) P.U.R. 1919-B-352; *Re Joplin & Pittsburgh Ry. Co.* (Mo.) P.U.R. 1919-B-366.

"Bond discount, constituting a payment for the use of money, is in the nature of an interest payment; that is, it is not 'a proper capital charge, but rather an adjustment of the interest rate to the existing market condition and chargeable to interest account and not capital. The Commission is of the opinion that brokerage and bond discount, are matters to be considered in connection with, and to be reflected in, the rate of return allowed; that such costs should be made up out of income by the creation of a sinking fund or reserve sufficient to cover the cost during the life of the bonds, and that therefore such costs should not in equity be considered a part of the cost of reproduction or of the 'fair value' to be taken as a base for the fixing of rates." *Potomac Elec. Power Co.* (D.C.) P.U.R. 1917-D-563; *Greensburg v. Westmoreland Water Co.* (Pa.) P.U.R. 1917-D-478; *Lincoln v. Lincoln Water & Light Co.* (Ill.) P.U.R. 1917-B-1; *Chicago, North Shore & Milwaukee Electric R. Co.* (Ill.) I.P.U.C. No. 6186; *Pine Lawn v. West St. Louis Water & Light Co.* (Mo.) P.U.R. 1917-B-679; *City Water Co.* (Mo.) P.U.R. 1917-B-624; *Lamar v. Intermountain R. L. & P. Co.* (Col.) P.U.R. 1918-B-86; etc. *Re Mississippi River & Bonne Terre Ry. Co.* (Mo.) P.U.R. 1918-C-

whether brokerage, deferred interest, or discount, is an interest charge.

The utility is ordinarily permitted to issue bonds to be sold at a reasonable discount, the amount to be determined by the figure which in the company's judgment is the most advantageous interest rate for the securities under the conditions of the money market at the time. The utilities are permitted to exercise judgment in determining what rate of interest will produce the most beneficial results from the financial viewpoint of the particular company.

If the companies were permitted to capitalize bond discounts the valuation would be a mere matter of convenience resting entirely with the utility issuing the bonds, for the amount of discount varies with the interest rate. The lower the interest rate, the greater the rate of discount. A bond bearing a low interest rate and sold at a large discount, creates a greater burden upon the consumer than a bond sold at par with a higher interest rate. If the amount chargeable to the capital account by means of bond discounts were left entirely in the hands of the company, regulation would be nullified. Bond discount represents no proper loss or sacrifice which can be assessed against the consumers by way of rates. It must be treated as interest, but the commissions have usually taken cognizance of such necessary expenditures in determining the rate of return.

VIII. *Piecemeal Construction*

A public-utility plant which has been constructed piecemeal throughout a long period of time by way of extensions and betterments cannot expect an allowance for engineering, architecture, supervision, etc., equal to that of a plant carefully planned and built as a whole. It is contended that such piecemeal construction is more costly than it would

321. In *Omaha & L. R. & L. Co. (Neb.)* P.U.R. 1915-B-416, bond' discount was held a proper capital allowance in a valuation for purchase-and-sale purposes.

be if the plant were constructed in one continuous operation. But the added cost is in the physical plant, not in the overhead items. Extensions and betterments are usually planned and carried out by the regular operating force of the utility. Outside engineering, supervision, and management is not required.

The original-cost appraisal includes the additional cost of piecemeal construction in the original cost of the equipment. It excludes hypothetical allowances for increased overhead items by basing the estimate on actual figures. The reproduction-cost appraisal must allow lower overhead items in case of piecemeal construction, and will admit or reject the increased costs of the physical equipment according as the estimate is based on present or original construction conditions. The final valuation must approximate actual conditions to determine investment.

IX. *Adaptation and Solidification*

Among the multitude of hypothetical value evils arising from the Pandora-Box valuation in the Minnesota Rate Cases was the question of adaptation and solidification. When a railroad is first constructed the newly made excavations wash and slip, the ditches fill from the action of the elements, and the embankments gradually settle. The track superstructure requires constant attention. Lining and dressing of ballasted and unballasted track are necessary. Waterways become clogged and must be opened. Bridges settle and must be put back into line. Station grounds require finishing and improvement. Unused material scattered during the construction period must be collected and stored or junked. The finishing touches must be put on the whole equipment and the property placed in orderly condition. Actual value results from this work. The maintenance charges are materially decreased, wear and tear lessened, and accidents occur less frequently. And there can be no question but that the work is necessary. Mr. Morgan,

therefore, included an allowance of twenty per cent in his appraisal to cover these items. The Commission rejected the allowance.¹

Adaptation, solidification, and seasoning are operating expenses, not capital charges. They involve no sacrifice by the investor. They represent no additional investment or capital outlay as permanent improvements do. They are primarily a maintenance charge; their permanent benefit is wholly incidental. They differ little from ordinary repairs. They must be paid for from revenue the same as worn-out ties, and cannot properly be given a place as capital in the valuation of the property.² To allow such charges to be capitalized for rate-making would force the public to pay the sum so charged as operating expenses, then pay a return upon it as a capital charge, and finally pay the principal again by way of allowance for depreciation. Approval of such a valuation would merely legalize one method of watering capital.

X. *Going Value*

Probably the greatest contest in the valuation field has centered on the question of going value. The utilities invariably contend that a regulatory valuation must include, in addition to the value of the physical property which is devoted to the public service, a sum alleged to attach itself automatically, barnacle-like, to every "going concern."

¹ Ann. Rep. Minnesota R.R. & Warehouse Comm. 1908, p. 40.

² No specific allowance was made for adaptation and solidification in the railroad appraisals of Wisconsin, Michigan, Texas, and South Dakota. *Mercantile Trust Co. v. Texas & Pacific Ry. Co.*, 51 Fed. 529. *People ex rel. New York, Ontario & W. Ry. Co. v. Shaw*, 143 App. Div. N.Y. 811, 128 N.Y. Supp. 177; *San Joaquin v. Stanislaus County*, 191 Fed. 875; *Re Metropolitan St. Ry. Reorganization*, 3 P.S.C. (1st Dist. N.Y.) 113; *Chicago & Northwestern Ry. Co. v. Smith*, 210 Fed. 632; *Ann Arbor R. Co. v. Fellows*, 236 Fed. 387. Special allowances have been made in Minnesota, Washington, Massachusetts, and Alabama to cover solidification during construction period, etc. See also *Re Tonopah & Tidewater R. Co. (Cal.)* 22 A. T. & T. Co. Comm. Leaflets 1064; *Re Missouri So. R. Co. (Mo.)* P.U.R. 1916-C-607.

This parasite bases its leasehold rights on the assumption that value accrues irrespective of the purpose of the valuation from the fact that the utility is actively engaged in conducting a successful undertaking; that it has connected to its mains many buildings and numerous consumers who are purchasing its products; that it possesses an organization and equipment developed for conducting its business in an efficient manner; that it not only has the capacity to earn but is actually earning; and is a living entity rather than a mere collection of physical assets.

The claim seems to have had its origin in a tax case decided by Justice Brewer in 1894¹ at the time he was struggling in the tentacles of the condemnation analogy; and to have been developed in the ill-considered purchase case wherein the United States Circuit Court of Appeals, in an outburst of generosity premised upon ignorance of the lower court's holding, made a double allowance for going value² in spite of the fact that the utility's franchise had expired and its right to operate as a going concern had ceased.

The origin of the going-value dispute is thus traceable to purchase-and-sale and tax cases. Here the analogy to condemnation is relatively close. Market value is sought and capitalized earnings may be considered within reason-

¹ *Cleveland, Cincinnati, Chicago & St. Louis Ry. Co. v. Backus*, 154 U.S. 439.

² *National Water Works Co. v. Kansas City*, 62 Fed. 853, 10 C.C.A. 653, 27 L.R.A. 827, 27 U.S. App. 165. The Court found that "the city, by this purchase, steps into possession of a waterworks plant, — not merely a completed system for bringing water to the city, and distributing it through pipes placed in the streets, but a system already earning a large income by virtue of having secured connections between the pipes in the street and the multitude of private buildings. It steps into possession of a property which not only has the pledge to earn, but is in fact earning. It should pay therefor not merely the value of the system which might be made to earn, but that of a system which does earn." On this basis the valuation was increased \$286,000. The lower court, however, had already valued the property as a going concern and taken into consideration existing connections, etc. See statement of Appraisal Commissioner Moore, vol. 38, *Transactions Am. Society of Civil Engineers*, p. 151.

able limits. In such cases the State Commissions have universally held that going value shall be included in the valuation, provided it actually exists.¹ But the going value thus allowed in purchase and condemnation cases is distinct from good-will and from franchise value, and it is not always allowed as a separate item.²

Several methods of determining going value have been suggested. The utility representatives have suggested numerous "rules of thumb" as measures of such value, i.e., a percentage allowance of the appraised value or of the gross annual income, or a definite sum per consumer or inhabitant of the territory served.³ It is apparent that such rules are too indefinite and conjectural to warrant more than passing consideration. There is no direct relation between such measures and a definite going value. They beg the question by assuming that going value must exist, when as a matter of fact it may or may not be present in a given utility property. Its determination, when it is present, must be made according to the facts of the particular case and cannot be based on rules of thumb.

Confusion has been introduced into the dispute by the use of various definitions of the term "going value" by the lower courts and commissions. Four definitions have been generally used. The term has been interpreted as the mere attribute of a utility in normal operation — organized, operating, and engaged in the public service. It has been defined as the difference between the exchange value of the plant and its appraised present value. Going value has been used as synonymous with "good-will" to mean the probability

¹ *Omaha v. Omaha Water Co.*, 218 U.S. 180, 54 L. ed. 991, 30 Sup. Ct. 615; *Gloucester Water Supply Co. v. Gloucester*, 179 Mass. 365, 60 N.E. 977; *City of Holyoke v. Holyoke Water Power Co.*, Ann. Rep. Mass. G. & E. Light Commissioners, 1903, pp. 77-82; *Galena Water Co. v. City of Galena*, 74 Kan. 624, 87 Pac. 735.

² *Kennebec Water Dist. v. City of Waterville*, 97 Me. 185, 54 Atl. 6; *Re Monongahela Water Co.*, 223 Pa. St. 323; etc.

³ Such arbitrary rules have not been wholly discarded however. See *Re Michigan State Tel. Co.* (Mich.) P.U.R. 1918-C-81, etc.

of customers continuing to come to the same company for service. And the term has been held to mean the net uncompensated deficits sustained by the company during the development stage of its existence, while operating at a loss. Whether any of these forms of intangible value are present in any particular utility, and represent real unimpaired investment which can be included in the rate valuation, is a question of fact rather than theory.

XI. *Going-Concern Value*

Going value of the first type, the mere attribute of normal operation, has been most widely discussed.¹ It is based upon expenditures made by the utility to secure new business, by way of "free demonstration," "commercial expense," etc. Such charges can be included in an original-cost inventory or the final valuation only when the items of expense were actually incurred and were met from the capital, not the operating account. If the expenditures were not incurred or were cared for as operating expenses, no sacrifice or investment has been made and such charges cannot be included in the valuation. If the expenditures were actually made, but have been repaid by the consumers, it is obviously improper to capitalize a duplicate charge against future consumers. Whenever operating expenses are included in the capital account the utility reaps a triple harvest. The investment, if one exists at all, is made by the consumer. He is forced to pay a return to the utility on his own investment, and in the end he must duplicate the investment by depreciation allowances. In addition, unless operating expenses are reduced in direct proportion to the charge to capital, the consumers are compelled continually to repeat this fictitious capitalization to their own everlasting detriment.

¹ Going-concern value has been allowed in Arizona, California, Idaho, Indiana, Kansas, Maine, Maryland, Missouri, Ohio, Washington, Wisconsin, and by the lower Federal Courts.

The criticism of this form of going value holds true in the reproduction-cost as well as the original-cost appraisal. Any allowance for such expenditures would create a fictitious capital charge confusing operating expenses and capital in the assumed reproduction process just as it was in the actual development.

XII. *Going Value and Exchange Differential*

Going value defined as exchange differential¹ may have a place in valuation for purchase-and-sale cases, provided the excess allowance is amortized from income within a reasonable period, or in valuation for condemnation or taxation; but it cannot be considered in a rate-base valuation. Capitalization of an exchange differential merely introduces the "vicious circle" whenever the question involved is the fixing of reasonable rates. Earnings are dependent upon rates and if the excess net earnings over a fair return upon a fair value of the property are capitalized as going value, the rates cannot be altered without destroying value. The argument is but a poorly camouflaged attempt to re-establish the rejected market value of the property as a rate base. Such going value has been universally denied by the regulatory commissions.²

Going value interpreted to mean the value of the estab-

¹ *Camara de Comercio v. Manila Elec. R. & L. Co. (P.I.) P.U.R.* 1915-D-977; *Am. Water Works Ass'n Proceedings*, 1909, pp. 184-279; *Trans. Am. Society of Civil Engineers*, vol. 73, pp. 326, 354; *Valuation of Peoria (Ill.) Water Works Co.* by B. & C. B. Williams, 1910, pp. 11-13; etc.

² The argument is stated in the Second Minnesota Rate Cases, 230 U.S. 352, 33 Sup. Ct. 729, in a discussion of apportionment of values between interstate and intrastate traffic, thus: "The value of the use, as measured by return, cannot be made the criterion when the return itself is in question. If the return, as formerly allowed, be taken as the basis, then the validity of the State's reduction would have to be tested by the very rates which the State denounced as exorbitant. And, if the return as permitted under the new rates be taken, then the State's action itself reduces the amount of value upon which the fairness of the return is to be computed." *Fuhrmann v. Cataract P. & C. Co.* 3 N.Y. P.S.C. (2d Dist.) 656.

lished business is very similar to going value based upon the exchange differential. It is argued that a utility company which has established a successful business is of far greater value than one possessing only a physical plant without satisfied consumers attached to its distribution system. The income derived from the consumers attached in the one case and not in the other is the only conceivable additional value. If the income derived were not sufficient to pay operating expenses due to unreasonable rates, poor location, or other similar cause, the mere fact that the consumers were attached and willing to accept service at the unremunerative rate would add no value to the equipment. The value of the established business is directly dependent upon the earnings from the business, is, in fact, synonymous with capitalized net income or prospective income. The interrelationship between rates and such going value necessarily excludes it from consideration in the rate base.

It is only when the theory and purpose of valuation are completely lost sight of that going value, thus considered, can have any place in the appraisal for rate-making purposes. Such value adds nothing to the worth of the service and forms no part of its cost.

XIII. "*Good-Will*"

Going value based on "good-will" has been repeatedly rejected as an element of value for rate-making purposes by the United States Supreme Court. In the *Des Moines Gas Case*,¹ Justice Day held that:

The element of "good-will," as applied to the ordinary merchant or manufacturer dealing with the public generally, is not considered in estimating the "going value" of complainant's

¹ *Des Moines Gas Co. v. Des Moines*, 238 U.S. 113, 59 L. ed. 1244. See also *Omaha v. Omaha Water Co.*, 218 U.S. 180, 30 Sup. Ct. 615; *Willcox v. Consol. Gas Co.*, 212 U.S. 17, 29 Sup. Ct. 192, 53 L. ed. 382; and *Cedar Rapids G. L. Co. v. City of Cedar Rapids*, 223 U.S. 665, 32 Sup. Ct. 389.

plant. It cannot be considered in a public utility like the one in question in this case, because the complainant has a monopoly of business in which it is engaged in the city of Des Moines, and those who desire to use its products must buy it. . . . That "good-will" in the sense in which that term is generally used as indicating that element of value which inheres in the fixed and favorable consideration of customers, arising from an established and well-known and well-conducted business, has no place in the fixing of valuation for the purpose of rate-making of public-service corporations of this character, was established in *Willcox v. Consolidated Gas Company*.

Appraisers, however, persist in including "good-will," or its equivalent, in the inventories they submit to the regulatory bodies, in spite of its unqualified rejection by the Supreme Court. Capitalization of consumers connected to the mains, of the population served, of the business organization developed, etc., is injected into the appraisal in one form or another irrespective of monopolistic conditions.

Good-will going value is claimed, too, for efficiency in management, competency in supervision, and similar economies.¹ Its advocates argue that exceptionally competent supervision of the undertaking or efficient management of the business produces corresponding financial standing; while incompetent management produces poor financial results. They would require the consumers practically to guarantee competent supervision. Such a stand is untenable. The consumers are legally entitled to efficient and adequate service and may demand as their right that they be served competently. Public-utility officials are paid from current operating expenses taken from the consumers by way of rates and it must be assumed that their services are rewarded in proportion to the competency of the officials. Neither excellent nor incompetent management can affect capital value for rate-making purposes. The consumer's

¹ See argument of Counsel in *Spring Valley Water Works Co. v. San Francisco*, 192 Fed. 137.

obligation ends on payment of fair charges for the service. It becomes the utility's duty to conduct its business in a reasonably competent manner when it accepts the consumer's payment. Any reward for exceptionally competent supervision or efficient management must be provided by manipulation of the rate of return.

There is little real argument for including good-will when the purpose of valuation is kept in mind. The object is to determine the cost of service. Good-will adds nothing to the service. Under non-regulated competitive conditions good-will cannot be considered as a cost in price-fixing without transferring it with the sales to the less fortunate competitor who has not included it in his price. So long as the owner continues in the undertaking, he has added nothing to his capital stock or to the value of the service he renders or goods he sells. He can secure a return on good-will value only by a sale of his plant or when he enjoys a monopoly. Regulation exists for the express purpose of preventing the latter type of return.

XIV. *The Wisconsin Rule*

Going value based on accrued deficits incurred during the development stage of the utility's operation has received lengthy consideration by many of the courts and commissions. The Wisconsin Railroad Commission early developed a method of computing past deficits and surpluses and decided that actual unrepaid early losses should be capitalized.

Going value is determined under the Wisconsin method by offsetting annually, for each year since the company's inception, all *bona-fide* operating expenses, including repairs, maintenance, taxes, and depreciation charges, and all return on the investment, against the year's actual gross earnings. Operating expenses often exceed the income, or prove insufficient to provide a reasonable return on the investment and accruing depreciation, during the early years

of the utility's development. Deficits are thus created which the Wisconsin theory considers as costs properly capitalized on the same basis as engineering expense, legal fees, and similar expenditures made during the construction period. But the gross annual revenue invariably exceeds the total annual operating expenses and creates an annual surplus above the fair return during the later years of the company's development, unless the project is either poorly conceived or badly managed. The Wisconsin rule balances the total annual surpluses and deficits at the date of the valuation, unless an undue period has passed, and capitalizes any excess of deficits over surplus. The rule, however, works only in the utility's favor, an excess surplus in no way diminishes the capital account.

The Wisconsin going-value theory seems inherently erroneous because it necessarily rewards past inefficiencies in management, organization, and plant and equipment. The greater and more numerous the errors of a utility have been in the past, the greater computed going value the utility will receive under this theory. Engineering blunders in the monopolistic utility field may be productive of an unreasonable, or an exceptionally large and remunerative, going value if this theory is strictly adhered to. Poor location becomes as advantageous as a well-adapted site, save for later operating expenses; and any field may be entered with immunity by the utility irrespective of its present ability to support the undertaking at reasonable rates. Such a valuation theory cannot be accepted for rate-making unless the Commission is willing to disregard the public trust, imposed upon it by law, of keeping rates within the worth of the service.

Numerous modifications of the Wisconsin rule have been developed by variance in the method of disposing of estimated depreciation. Appraisers, in computing a past-deficit going value, seldom give the same consideration to depreciation in the capital account that they do to that same

item in the annual operating-expense account. These tactics produce most misleading results. When appraisals thus drafted are gone over and depreciation consistently treated all the way through, the going-value allowance is very frequently changed from a net deficit to a net surplus.

The past-deficit method of determining going value permits of two treatments of depreciation in its relation to such value: (1) the capital account may be reduced by an amount identical to that charged against annual depreciation, and extensions and betterments added progressively to capital; or (2) the original capital charge may be preserved and going value made sufficiently comprehensive to include the depreciation fund and its earnings accumulated through the medium of annual charges.

Looseness and inaccuracy are drawn into the allowance for past deficits by the almost universal failure to consider the accumulation of materials and supplies, working capital, cash surplus, etc., during the years of operation. Such accumulations, if they had been declared as dividends, would have greatly reduced the deficits in the past. Their neglect, in a past-deficit appraisal, operates to pad the capital account.

XV. The Comparative-Plant Estimate of Going Value

Closely allied to the valuation of past deficits is the method of estimating going value as the cost of reproduction of a predetermined income. This method, predicated upon the assumption that going value necessarily exists in every public-service plant, is purely hypothetical and conjectural; and is subject to innumerable assumptions which make it capable of leading to any results the appraiser may wish to reach.

The comparative-plant method differs from the Wisconsin system only by a slight variance in the basic assumptions. The reproduction method assumes that a new company, the exact counterpart of the existing utility, begins

operation on the date of the valuation, and that the existing plant ceases to exist, though the environments for utility service remain unchanged. An arbitrary period is assumed within which surplus will overtake early deficits in the operation of the imaginary corporation. The appraiser then makes a guess as to the amount which the utility would spend in developing the business during that period. The estimate has no foundation in fact. It is a mere guess, worthless as a check upon, or supplement to, the original-cost inventory, and wholly useless in the endeavor to determine unimpaired investment.

Commissioner Niles considers such going value at length in *Re Grafton County Electric Light and Power Company*,¹ thus:

The conditions which would exist if the prosperous communities of Lebanon, White River, and Hanover were suddenly deprived of electricity . . . are unthinkable. No such thing has ever happened. And yet engineers do not hesitate to testify as to just how long it would take these same people, if it did happen, and the plant were reconstructed, to make up their minds that electricity would be a good thing for them, and by intricate calculations to show the exact amount which the company would lose during the time required to "educate" the intelligent citizens of these towns up to that point of appreciation of the value of electricity to which they have already attained. And this it is claimed must be allowed as "going value."

Of course, the fact is that while the theory of cost of reproduction rests upon the assumption of present conditions in every respect except for the non-existence of the plant to be reproduced, when it comes to estimating going value on the basis of deficit from operation in early years the engineers turn their backs on their own fundamental hypothesis, and assume that the inhabitants of these towns are as completely ignorant of the use of electricity as they were twenty or twenty-five years ago, when it was first introduced to them.

There is another absurdity in the reproduction theory which is suggested by the consideration of the developmental period. It is assumed that the plant is to be reconstructed complete as at the

¹ (N.H.) P.U.R. 1916-E-887.

present day, with every extension, not merely to the premises, but into the very houses, including the actual installation of meters, for people who are not going to use the electricity for a period of three or four years after the construction is completed. Such a thing has never been done, and never would be done by sane men.

The courts and commissions have attached no weight to the hypothetical theories and conjectures of the exponents of the reproduction or comparative-plant method of estimating going value.

XVI. *Going Value and the Courts*

There has been great uncertainty in the Commission decisions as to what constitutes going value. The courts have helped little to clear the problem. No definite, exact definition of the term has been attempted. A careful consideration of the cases indicates that any element of value which must base its claim for consideration on the increased worth of the property by reason of a well-organized, fully developed, paying business, rather than upon actual unrepaid expenditures made during the development stage of the undertaking, must be excluded from the rate-making valuation. Expenditures actually made during the development stage of the business, reasonably necessary and never repaid as operating expenses or excessive return (if such are conceivable), might be allowed as going value; though the courts have never stated the necessity of such an allowance. No separate allowance for going value is necessary, and the general practice of the State Commissions is to make none. The property must, however, be valued as a going concern. This sounds ambiguous, but it is not.

Property of a public utility in place but not in use would have only scrap value — less than junk value. The difficulties connected with its reclamation would, in places, wholly offset its value. Such valuation of the property would be manifestly unjust for any purpose even after the expira-

tion of the franchise. Such a valuation for rate-making purposes would clearly violate the due-process clause of the Fourteenth Amendment. To prevent this inequity the courts have held that the property must be valued as a going concern. That holding implies no necessity for a separate allowance for going value. No separate allowance would be possible unless premised on and added to scrap value rather than present value.

The appraiser instinctively includes such going value in his estimate and considers the plant as a living concern. If this were not true, the only value the appraisal would show would be the scrap or junk value of the physical plant. Such an appraisal could make no allowance for intangible values. An appraisal placing a fair present value on the items inventoried precludes the assumption that the appraiser acted upon any other basis than the consideration of the plant as a going concern.

Any element of going value, other than this general attribute which prevents an inequitable dwarfing of investment, must be proven by the utility raising the claim. The burden of substantiating estimated development losses under the title of going value rests upon the utility.¹ Such losses to merit consideration must have accrued during the development or experimental stage, must have been the result of reasonable expenditures by a competent management in a properly located undertaking, and their proof must be accompanied by evidence rebutting the presumption that subsequent profits have repaid the early losses. Losses due to speculation cannot receive consideration.²

¹ *Pillsbury v. Peoples Gas Light Co.*, 4 N.H. P.U.C. 391; *Des Moines Gas Co. v. Des Moines*, 238 U.S. 113, 59 L. ed. 1244; etc.

² The recent decision of the Federal Supreme Court in *Denver v. Denver Union Water Co.*, 62 L. ed. 305, March 4, 1918, while it sustains a separate allowance by the master for going value, does so on the facts of the particular case and adds nothing to the holding in the *Des Moines Case*. The master's allowance was based on the compulsory operation of

XVII. *Franchise Value*

Considerable confusion was drawn into the early valuation discussions by a belief that a substantial allowance must be made, even in rate cases, for franchise values. The theory seems to have had its origin in the pestiferous condemnation analogy, and to have been strengthened by the confusion arising from the attempt to base rates on exchange value, and by the fact that franchise values had been taxed.¹ Numerous theories involving a conjectural, fictitious allowance were advanced, but few received consideration. Franchise values are admissible in tax, purchase-and-sale,² and condemnation cases,³ and under certain conditions in rate cases. They are, however, necessarily excluded in the great majority of rate valuations. The question can be properly approached only by starting with a consideration of the true nature of the franchise.

The purpose of the franchise is to transfer to individuals the Government's right to conduct what has been denominated a public undertaking. The special privilege of exercising part of the State's sovereign powers, namely, the right to use the public highways in a manner imposing an additional burden, and the right to condemn private property, are transferred by the franchise to the individuals to place them in a position approximating that of the State. The franchise does not increase the value of the property to which it applies. On the contrary, it limits that value the utility at a loss under highly unsatisfactory franchise conditions. The decision guards particularly against a duplication of value by the overlapping of going value and franchise value. The decision contains no mandate that going value must be included as a separate item, provided the property is valued on the going-concern basis.

¹ *Spring Valley Water Co. v. San Francisco*, 165 Fed. 667, 696; *St. Louis, etc., R.R. Co. v. Hadley*, 168 Fed. 317; etc.

² The State Commissions, without exception, hold that franchise value may be considered in purchase-and-sale cases, because the exchange value of the plant is in question.

³ *Monongahela Navigation Co. v. United States*, 148 U.S. 312, 13 Sup. Ct. 622, 37 L. ed. 463. The cases are unanimous in allowing franchise value in condemnation proceedings.

by imposing restrictions and burdens upon the property and decreasing the bundle of rights which compose it. The value of the franchise to the utility lies in the fact that it enables the company to go ahead and engage in the undertaking. It changes the plant from an inactive to a live organization. The value thus conferred is allowed in rate-making by appraising the property as a going concern. It cannot be allowed a second time under any alias, however attractive it may sound.

It cannot be denied that the franchise has value. The State recognizes and taxes such value. But it does not necessarily follow that the utility possessing the franchise is entitled to earn a return upon this value. No reasonable interpretation of the franchise can read into it more than a contract to permit the utility to earn a return on its investment in a certain way. The franchise does not increase the investment. It adds no producing power to the property. It forms no part of the elements which make up cost of service, save in so far as it represents actual capital investment. It can have no existence as an element of value apart from the physical property of the utility.

The public-utility franchise has no counterpart in the industrial plant. The manufacturing business may begin operation at will. If it acquires a monopoly, it subjects itself to control, but necessitates no franchise grant. Any additional worth of service developing from the franchise, therefore, must be based upon the public nature of the undertaking, the waiving of the public right to conduct it; and, therefore, except in so far as the consideration actually paid for the privilege is concerned, is a sacrifice or investment by the public, not the stockholders, upon which the public alone is entitled to a return.

The present attitude of the State Commissions toward franchise value is fairly stated by the Wisconsin Railroad Commission in *Appleton v. Appleton Water Works Company*,¹ thus:

¹ 5 W.R.C.R. 215, 281.

The contention often made that the value of franchises should be included as an element for consideration in determining the present fair value of the active property of a public service corporation for rate-making purposes, though supported by judicial sanction in certain jurisdictions, does not appeal to us as either sound or practical. The only measure of franchise values recognized by the courts is the earning capacity of the property to which the franchises give vitality. Earnings are dependent upon the rates that are exacted, and, hence, the higher the rates the more valuable are the franchises, and *vice versa*. Obviously, therefore, it would be futile to attempt to determine the reasonableness of a rate by any standard which is at all dependent upon franchise values for its dimensions. Such a method of establishing rates would only lead to conjecture and result in no reliable or satisfactory conclusion. . . . The concession that a franchise has value and is the subject of property rights does not at all militate against the principle that a franchise is not capable of capitalization for the purpose of exacting of the public charges in excess of what would be required to pay a reasonable return upon the actual reasonable investment. To permit the grantee to capitalize the franchise as against the grantor, would be similar in effect to adding to the consideration for service an additional sum based upon the value of the contract to the party rendering the service.

Franchise value in rate cases can be allowed only in exceptional cases. The great majority of the public-utility franchises in the United States have been acquired without cost to the stockholders of the companies. They represent no sacrifice or investment upon which a return is necessary. They form no element of production cost. Such value as they have, not forming a cost element, is not within the scope of the due-process limitation upon rate-making. Where the State, however, has specifically and expressly fixed the value of the franchise, and estopped itself by the representation thus made to, and acted upon by, the utility, the State cannot destroy the value it has thus created by estoppel.¹ The State has in effect agreed to recognize franchise value to a definite extent as a cost element. The obligation of that agreement cannot be impaired.

¹ Willcox v. Consolidated Gas Co., 212 U.S. 47, 29 Sup. Ct. 192, 53 L. ed. 332.

Where the public utility has made a reasonable *bona-fide* expenditure to secure the franchise, the sum so invested in the undertaking may be capitalized. There is, however, no definite holding by a court of last resort that such sum must be included in the valuation. The only case in which its inclusion would seem mandatory would be where the expenditure added to the worth of the service, namely, where it was reasonably necessary, used or useful, and formed a part of the justifiable, as opposed to the actual, cost of the service. The State Commissions, almost without exception, include funds expended in good faith in securing franchise privileges; with the qualification, however, that the franchise so secured is used and reasonably necessary in rendering the service in question.¹

In tax cases, in purchase-and-sale cases, and in condemnation proceedings the franchise, in so far as the valuation is not limited as hereinbefore explained by the rate-base value, is valued at its market value based upon duration, earnings, and similar considerations. There has been some dispute in the past concerning the method of determining the market value of the franchise, but the weight of opinion now seems to favor the capitalization of earnings based on a reasonable rate for the service performed.

XVIII. *Working Capital*

The appraisal of the tangible and intangible elements thus far considered does not complete the valuation. A utility, to conduct its business, must have a sum for material and supplies and other working capital in addition to that invested in land, buildings, plant, and equipment. The amount necessary to meet such requirements varies with the working conditions. Coal, oil, coke, ties, poles, wire, material for renewals and replacements, etc., must be carried in stock. A reasonable average sum to cover the justifi-

¹ Petaluma & S. R.R. Co. (Cal.) P.U.R. 1915-C-742; *Corona v. Corona Home T. & T. Co.* (Cal.) P.U.R. 1915-F-1014; etc.

fiable investment in such supplies is a proper capital charge and should be considered in the rate-making valuation; providing the property valued constitutes an operating plant.¹ Material and supplies carried for new construction, however, cannot be separately valued if they have received consideration as interest during construction in the allowance for overhead.²

The company must, in addition to the purchase of supplies, pay its employees and distribute its product in advance of the receipts from rates. The bills may not be collected for thirty or sixty days. The amount of floating capital necessary to meet current obligations is not susceptible of certain ascertainment. The prevailing practice is to include in the valuation a sum sufficient, in the judgment of the commission, under normal conditions to meet and carry the obligations incurred in bills payable prior to receipt of the return from bills receivable.

XIX. *Summary*

In valuation of the intangible elements in the utility property for rate-making purposes the aim is to ascertain the actual, reasonable, unimpaired investment; irrespective of whether circumstances dictate that the original-cost, reproduction-cost, or normal-cost theory of appraisal be given the greater weight. Here, more than anywhere else in valuation, the importance of the unimpaired-investment basis of rate-making is apparent. Unless such a base is adopted, the allowance for intangibles becomes a mere conjectural sum predicated upon a guess unlimited save by the modesty or lack of imagination of the appraiser. All semblance of true relationship to cost of production is wiped out.

Estimates of intangible values must be inaccurate at the

¹ Working capital cannot be allowed in the case of a non-operating company. *Petaluma & S. R.R. Co. (Cal.) P.U.R. 1915-C-742.*

² *Mayhew v. Kings County Lighting Company, 2 P.S.C. (1st Dist. N.Y.) 659.*

best. An appraisal which opens the door to unnecessary inaccuracy, by basing estimates upon conjecture and hypothetical premises when facts are available, cannot be too severely condemned.

Actual *bona-fide* expenditures for reasonable organization expenses, engineering and superintendence fees, interest on a reasonable sum idle during an equitable part of the construction period, insurance, during the construction period, and actual expenditures for franchise privileges have been universally included in the valuation. Discount on bonds is by the weight of opinion considered a form of interest and excluded from the valuation. Contractors' profits and promoters' profits are included when shown to have been actually paid, and to have materially benefited the service. Value arising from adaptation and solidification has been regarded with suspicion, but included when shown really to constitute a used and useful element in the production of the service. Good-will value is flatly repudiated and going value has been widely rejected as a separate item, but the property has been universally valued as a going concern.

CHAPTER VIII

DEPRECIATION

I. *The Theory of Depreciation*

The original-cost appraisal, the reproduction-cost estimate, and the normal-cost figures show the actual investment in the utility property. The valuation decides which of these careful guesses, in view of the facts of the particular case, approximates most closely the actual, *bona-fide*, reasonable investment made by the stockholders in property used and useful in rendering the public service. This figure represents the justifiable sacrifice made by the investors, and the value of the property fair to consumers and stockholders alike. It does not, however, state the "present fair value." It does not show the value of the property assured a return by the due-process clause because actually used in rendering the public service.

Valuation is resorted to only in the case of plants long in operation. The value of such systems is never the original investment to date. It is rather the present unimpaired investment. The moment the plant is put in place and operations begin, wear and tear starts which immediately diminishes the value, and sooner or later renders the equipment useless. Every capital item in the public-utility inventory, with the possible exception of land, is a more or less perishable asset. Buildings, plant, fixtures, machinery, leases, patents and contract rights which are limited in duration, distribution systems, rails and rolling stock, all are the prey of depreciation, even though their use may have been slight. Their value is lessened by age, natural decay and the action of the elements, by wear and tear in use, by obsolescence or inadequacy, by accident, and by other similar forces. This unavoidable loss is called "depreciation."

Depreciation may be defined here as the unavoidable decrease in the value of a perishable asset below its cost; occurring during the period of its use, on account of the action of the forces set forth above. The early cases made a confusing distinction between two general classes of depreciation, physical and functional. Physical depreciation results from use, or from the exposure of the assets to the elements. Functional depreciation is the result of progress necessitating more efficient appliances or larger capacities for successful operation. There is little difference between the two. Both represent a loss in value due to the lessened life of the equipment.¹ The differentiation is predicated solely on the nature of the agency shortening the life.

The theory of regulation is that the utility is entitled to earn a fair return upon its reasonable investment and keep that investment unimpaired. Depreciation seriously impairs the investment, and loss from this source is irresistible. This loss in value of the equipment is clearly a part of the cost of service.¹ Service is the element taken, and the payment for that element required by the due-process clause is dependent upon the cost of service. The rate to be reasonable must include every element of cost. Accruing depreciation is undeniably such an element. The utility, therefore, is entitled to secure from rates a sum, in addition to operating expenses and return upon the justifiable investment, which will enable it to offset this loss as it accrues. Both the stockholders and the public suffer if the utility management is remiss in its obligation to collect a fund for replacements, or if the fund collected is not used to counteract the wasting of assets.

Depreciation has occurred in the case of every operating utility valued. If the depreciation reserve has been collected

¹ Nicholson, *Cost Accounting, Theory and Practice*, pp. 26, 27; Cole, *Cost Accounting for Institutions*, p. 46; Ridgway, *Cost Accounts*, p. 39; Scovell, *Cost Accounting and Burden Application*, p. 80; Moxey, *Principles of Factor Cost Keeping*, p. 75; etc.

and is intact, or has been properly used in making replacements, the capital is unimpaired. If the fund has not been used to counteract depreciation, but has been paid out in dividends, on the theory that it represented profit, a part of the investment has been withdrawn, is not used in rendering the service, and is not within the protection of the due-process clause. The net profit available from earnings cannot be determined before every element of cost of service is charged against the gross profit. Depreciation is a cost element. It is immaterial whether regulation required the maintenance of a depreciation reserve. The element of manufacturing cost could not be changed by taking advantage of a loophole in the law to pay dividends from capital. Depreciation occurred. The value of the equipment was decreased. The company was obligated to make good that decrease or charge a corresponding amount to the capital account. The situation differs in no manner from that in which the company sells outright a portion of its equipment and pays out the proceeds as dividends. Accrued depreciation unprovided for lessens the value of the operating plant and is equivalent to a withdrawal to that extent of capital originally invested.

It is apparent that depreciation presents two distinct problems in valuation work. The appraised value of the property, representing the cost new, must be diminished to show the losses which have already occurred from physical or functional depreciation. And provision must be made to meet the losses which are to occur in the future from those causes, so that the present unimpaired investment may be maintained *in statu quo*.

II. *Efficiency and Depreciation*

The loss by wear, obsolescence, or accident decreases the value of the plant materially and continuously. It may be a long time after operation starts before repairs or actual replacements become necessary, but the loss in value is

going on all the time. It may not greatly lessen the efficiency of the equipment or the quality of the service rendered, but, thanks to the utility invocation of the due-process clause, neither efficiency nor quality of service is the object sought. Neither is the basis of fair value.¹ Failure to keep this point in mind caused much confusion in the early valuations. Skillful manipulation of the ambiguous word "efficiency," as a middle term in argument leading to the fallacious conclusion that depreciation does not exist in the ordinary plant when maintenance is not slighted, caused the misconception. A similar use of the ambiguous middle term "profit" furthered the deception. Utility appraisals drew a word picture portraying depreciation as a sort of Jekyll and Hyde entity, non-existent so far as reduction of value to meet past loss is concerned, but looming genii-large when future loss is considered.

The utilities sought to establish a distinct line between accrued and accruing depreciation. The significance of their action is apparent. The loss in efficiency in a plant does not occur with the same rapidity as the loss in value resulting from depreciation. The plant may be maintained at practically one hundred per cent efficiency, by apt maintenance and repairs, and still suffer an accrued depreciation of twenty or more per cent. After comparatively short operation the plant reaches what has been called a state of

¹ The State Commissions have repeatedly held that the fact that the plant is operated at one hundred per cent efficiency does not entitle the company to a plant value of one hundred per cent of condition new in a valuation for rate-making purposes. See *Salinas City v. Coast Valleys Gas & El. Co.* (Cal.) P.U.R. 1915-B-460; *Re Janesville Water Co.* (Wis.) P.U.R. 1915-A-178; *Lincoln v. Lincoln L. & W. Co.* (Ill.) P.U.R. 1917-B-1; etc. But see, *Butler v. Lewiston A. & W. St. R.R. Co.* (Me.) P.U.R. 1916-D-25; *Rich v. Biddeford & S. W. Co.* (Me.) P.U.R. 1917-C-982, 1000; and *Chesapeake & P. T. Co.* (Md.) P.U.R. 1916-C-925, holding that the fact that the property has been kept up to a high level of efficiency should be considered in ascertaining its depreciation. These decisions seem to confuse efficiency and depreciation and attempt to make an allowance by way of depreciation which would ordinarily be cared for in fixing the rate of return.

“average depreciation.” The depreciation remains almost stationary at from twenty to thirty per cent of the cost new. The efficiency is maintained at approximately one hundred per cent. The argument made by the utilities has been that past depreciation should be figured on the basis of efficiency irrespective of the life of the equipment, but that accruing depreciation should be figured on the basis of the probable additional life. Thus, in the case of a plant operating at practically one hundred per cent efficiency there would be no reduction in value due to past loss by wear and tear. Any surplus collected by way of depreciation reserve would be available for dividends. No depreciation having occurred, according to this argument, the entire capital charge of the equipment would have to be spread over the admittedly shortened life of the equipment in order to provide for its retirement at the end of that life. This would increase the percentage of the depreciation allowance and leave a handsome net profit for the manipulator.

The no-past-depreciation view, perhaps honestly entertained, was prevalent in early valuation cases. Many of the engineers employed in valuation work considered any reduction for accrued depreciation an attempt to regulate past profits, in the nature of a confiscation of property, depriving the investor of the return on that part of his investment deducted. The late Henry Floy, in his work on “Valuation of Public Utilities,” takes the stand that no depreciation should be deducted from cost new, except perhaps an insignificant sum necessary to keep the plant in a one hundred per cent operating condition. Mr. Humphrey, in a paper on “Estimated and Actual Depreciation,” read before the American Gas Institute,¹ took the same stand. Mr. James Allison, in a report to the St. Louis Public Service Commission,² concocts a novel

¹ Proceedings of American Gas Institute, vol. 8, part II, page 521.

² *Should Public Service Properties Be Depreciated*, Sept. 11, 1912. Professor Allyn Young, in an article on “Depreciation and Rate Control,”

theory wherein he eliminates depreciation by valuing the plant at a "normal" depreciated value and including the loss due to depreciation in the going value as a cost of establishing the business.

Variation of depreciation methods to meet the conditions in the individual plant is desirable in the case of industrials, but the public-utility accounting requirements are different. Those elements of public interest which distinguish the utility from other industries necessitate stricter accounting methods. Regularity and uniformity of accounts are absolutely necessary to successful regulation. Some of the State Commissions have sought to apply different depreciation methods to different utilities, but the general attitude of the regulatory bodies is that one system must be rigidly applied to all. The attempt by utility advocates to establish one rate for accrued and another for accruing depreciation has strengthened this attitude.¹

reprinted from the *Quarterly Journal of Economics* for August, 1914, took a somewhat similar stand holding that to deduct accrued depreciation from the rate valuation when no depreciation fund had been actually maintained, would merely be a regulation of past profits. Such arguments are clearly based upon a misconception of profits in so far as they do not rest upon a confusion of efficiency and depreciation.

¹ The Illinois Public Utilities Commission states the attitude of regulatory bodies in general in its Third Annual Report, 1916, p. 120, where it says: "Argument for the adoption of the sinking-fund theory of treating accrued depreciation would be far more convincing were an adherence to the one theory consistently practiced to the exclusion of all other theories. In submitting the question of current or accruing depreciation, it is often argued that the same percentages which have been used for accrued depreciation computed under a sinking fund should be increased somewhat by an allowance for future contingent depreciation. It is this lack of consistency which causes a doubt to arise as to the sincerity of arguments for deduction of accrued depreciation by other than the straight-line method. One rate for depreciation in the properties for the time that has passed, and another rate for the time that is to come, with the date of a rate-making proceeding as the dividing line, is the essence of the question presented. Obviously, the only guide to the future is what has occurred in the past. . . . Rate-regulatory commissions, more and more, are insistent that the subject of depreciation be presented in a fair manner under all circumstances by the public utilities which appear before them; and, above all, the commissions are requiring that utilities

All of these theories are founded upon a confusion of loss of efficiency and depreciation. Such advocates ask that the commissions close their eyes to all existing depreciation and assure the public that property that has been used for more than half its useful life and must soon be replaced is worth the cost new. The argument relies too much upon the credulity of the public. Thorough maintenance, unlimited repairs, and careful usage may prolong the life of the equipment, but it cannot wholly counteract the deterioration. It cannot provide for the discarding of equipment to meet unexpected developments in the industry, in the amount of business or the type of machinery. It cannot prevent accidental loss from explosion, fire, storm, etc. It cannot even insure efficiency in the face of such losses. Commissions and courts, with few exceptions, therefore, have ruled against the no-depreciation theories.

III. *Judicial Holdings on Depreciation*

The earlier decisions of the Federal Supreme Court seem confused on the question of depreciation. In *Union Pacific* be consistent in the treatment of all angles of the subject." Commissioner Max Thelen of California commented similarly on this point in the *Palo Alto Gas Case*, 10 Rate Research, 93, saying: "I am becoming increasingly impressed with the absolute necessity on the part of all parties of a consistent treatment of the subject of depreciation irrespective of the nature of the particular proceeding which is being considered and of the interest of the parties therein. The Railroad Commission has found in a number of instances that while in rate cases in which it is to the interest of the utility to secure as large an allowance as possible for depreciation annuity, the utility has eloquently presented the need for a large depreciation reserve, yet, when it came to the declaration of dividends and the placing of apparent additional value on common stock, the utility has insisted that its property depreciates but very little and that only a small depreciation annuity and depreciation reserve are necessary. Likewise, we have had instances in which the same utility has claimed a large depreciation annuity in a rate case and later, when its property was being condemned, has claimed that its property is in almost 100 per cent physical condition and that only a small deduction should be made for accrued depreciation. It is unnecessary to point out that a utility will gain nothing in the long run with the public authorities by making such conflicting claims."

*Railroad v. United States*¹ the language of the decision was broad enough to include depreciation in the expenses chargeable to earnings in determining net profit. But in *United States v. Kansas Pacific Railway Company*,² decided the same year, no deferred renewals or replacements were allowed as a charge against profits. The more recent decisions, however, regard depreciation as a proper charge. Thus, in the *City of Knoxville v. Knoxville Water Company*,³ the Court said in part:

A water plant, with all its additions, begins to depreciate in value from the moment of its use. Before coming to the question of profits at all, the company is entitled to earn a sufficient sum annually to provide not only for current repairs, but for making good the depreciation and replacing the parts of the property when they come to the end of their life. The company is not bound to see its property gradually waste, without making provisions out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired. . . . It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public-service corporation at least, its plain duty to the public. . . . If, however a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon over-issues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question, the true value of the property then employed for the purpose of earning a return cannot be enhanced by a consideration of the errors in management which have been committed in the past.

A similar ruling is made in the *Consolidated Gas Company Case*.⁴ These cases were not clear in their inclusion of functional depreciation, but this point was cleared by its allowance in the *Des Moines Water Company Case*.⁵

¹ 99 U.S. 402, 25 L. ed. 274 (1898).

² 99 U.S. 459.

³ 212 U.S. 1, 13, 29 Sup. Ct. 149, 53 L. ed. 382.

⁴ *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 382. See also *Cumberland T. & T. Co. v. Louisville*, 187 Fed. 637, 654.

⁵ *Des Moines Water Co. v. Des Moines*, 192 Fed. 193, 197; affirmed, 238 U.S. 153. See also *People ex rel. Kings Co. L. Co. v. Public Service Comm.*, 210 N.Y. 479.

The weight of authority in commission and court decisions now requires a reasonable deduction from cost new for accrued depreciation both physical and functional, and an identical treatment in the case of accruing depreciation.¹ The amount of the depreciation and the method of ascertaining it, however, have not been fixed by the Court, though there is considerable uniformity as to method in the State Commission practice.

Computations of depreciation depend upon three elements, the investment, or cost less salvage value, the age, and the life of the asset. The difficulties involved in the depreciation problem are those of the determination of these three elements. The problems presented are those of the engineer. Having found the elements, depreciation becomes an accounting problem. The methods of ascertaining the three depreciation elements have been varied, and confusion has been introduced by confusing the engineering and accounting features.

IV. *Salvage Value*

The first issue presented by the depreciation problem is the determination of the cost on which deterioration is to be estimated. As an accounting problem the solution is simple. When a renewal is made, the original cost of the equipment retired is removed as an asset, by crediting the plant account, and the cost of the new equipment is entered by debiting that account. The cost of the item retired is recovered by crediting the depreciation account, and the cost of the new equipment becomes a charge against that account to be amortized within the estimated life of the item.

¹ Accrued depreciation was rejected as unjust to the utility by the Idaho Commission in *Sandpoint v. Sandpoint Water & L. Co.* (Idaho) P.U.R. 1915-F-445; and *Murray v. Public Utilities Comm.* (Idaho) 150 Pacific 47, P.U.R. 1915-F-436. The Massachusetts Commission refused to deduct for accrued depreciation where the failure to provide a depreciation reserve was not due to mismanagement and only meager dividends had been paid. *Blue Hill Street R. Co.* (Mass.) P.U.R. 1915-E-370.

The original cost of the equipment retired included the cost of installation. The retirement cost includes the similar costs involved in the removal of the equipment, but is decreased by any value of the item as scrap or second-hand equipment. The difference between the scrap value and the cost of removal is the positive or negative salvage value, and must be accounted for before depreciation is figured. The cost which must be amortized is the original cost of the equipment increased or decreased, as the case may be, by the salvage value.

The original-cost appraisal treats depreciation just as the accountant shows it on the books. The reproduction and normal cost estimates, however, necessarily base depreciation on the estimated reproduction or normal cost new plus or minus the estimated salvage value. The final valuation is dictated by the appraisal method accepted for the particular case.

V. *Depreciation of Intangibles*

A further question arises as to the sum to be depreciated. Every public-utility inventory, it has been pointed out, lists numerous items representing cost of intangibles properly included in the valuation. The problem is, Shall these values be depreciated as the tangible items of plant and equipment are, or shall they be treated as land and considered free from depreciation?

Intangible values fall naturally into two classes. Engineering, supervision, and similar expenses attach to tangible items and really form a part of the cost of those items. When the tangible property wears out or becomes obsolete and is replaced new, overhead outlays are necessarily incurred in connection with the replacement. The erection of a new building necessitates architectural fees. The installation of a new boiler involves engineering expense. Such overhead costs serve no useful purpose after the tangible assets to which they attach have been replaced. They,

therefore, must be amortized from the depreciation reserve during the life of those assets.¹

Other intangible costs are of a more general character and cannot be considered a part of the expense of any single item or class of items of the tangible property. They are incurred only once and form a part of the cost of the composite plant. Such elements of value are affected by time only when the life of the whole plant is limited. Ordinarily, they are not depreciated.²

Overhead costs which do not seem to fall distinctly into either of these classes, like interest during construction, and taxes and insurance before operation is started, must be included in the first class and be amortized.

When depreciation is figured as an arbitrary percentage based on the fair value of the plant and a composite life, all overhead items, of course, must be depreciated.

VI. *Estimated Life*

The difficult problem involved in determining depreciation is the fair estimating of the probable life of the property. The wasting assets which compose a public-utility plant are of many kinds. The estimated life of each class will be different. The estimated life of each item in the class may vary on account of working conditions, use, etc. Local conditions affect the separate items and the composite life of the plant. The type of construction, the manner of installation, the character of the management, and the policy as to maintenance and repairs materially affect the life of the equipment; and the date of installation, character and adequacy of the equipment installed, are controlling elements, particularly in estimating functional depreciation. The problem, though often forced upon the accountant, is

¹ Portland Railroad L. & P. Co. (Or.) P.U.R. 1916-D-976; Rates of Missouri Southern R.R. Co. (Mo.) P.U.R. 1916-C-607; Campbell v. Hood River G. & E. Co. (Or.) P.U.R. 1915-D-855; Chicago & North Shore Elec. R.R. Co. (Ill.) P.U.R. 1918-A-388.

² Lima v. Lima T. & T. Co. (Ohio) P.U.R. 1916-E-670.

an engineering one involving actual inspection as well as theoretical treatment.

VII. *The Maintenance Plan and Appraisal*

The oldest and perhaps the simplest attempt to meet the depreciation issue was the maintenance plan whereby the consumer was charged for all repairs and renewals of the year. The system was extremely faulty in that during the early part of the estimated life of the wasting asset practically no charge was made, while during the later periods of the life, the asset deteriorated rapidly and excessive payments were required. The system further failed to take into consideration the fact that in spite of maintenance and repairs, assets must eventually be retired and a loss of capital occur.

Probably the depreciation system next devised was that known as the "appraisal plan." Under this system the appraiser inspected the property and estimated, from the examination, the loss due to accrued depreciation. The plan was subject to most of the defects of the maintenance system, since the wear and tear during the early life of the equipment does not necessarily show proportionately to the degree in which it has actually occurred.

Neither of these forms of handling the depreciation problem has received the sanction of the public-service commissions.

VIII. *The Straight-Line Method*

Perhaps the most universally used theory of determining depreciation is the straight-line method. This system, when the estimated life is made with due regard to all known operating conditions, most closely approximates the facts surrounding utility operation and financing; and is thoroughly consistent, both in the capital account and in the annuities to be set aside from operating expenses. When this method of estimating depreciation is applied, the total

amount to be written off as impaired investment is distributed equally between the periods of the estimated life of the property valued, by dividing the balance between the cost new and salvage value by the estimated life.

This method of depreciation, though widely enforced by regulatory bodies, has met with considerable opposition from the utilities, on the ground that it does not spread the burden equitably over the estimated life period. The plan assumes that the property depreciates in direct proportion to age, though it is common experience that such is not the case. The argument extended to include maintenance is that already suggested, that immediately following the acquisition of the property there is little or no expenditure required for maintenance and repairs, but in the later periods of its estimated life considerable expense is necessary for upkeep. So far as accounting is concerned, the argument continues, the figure which must be evenly spread over the life of the property is the sum of the depreciation charge plus the item of plant maintenance and upkeep.

This criticism is scarcely justified by practice. In a plant which has been operating any considerable length of time the cost of repairs tends to reach an average annual sum. No two items of equipment wear with exactly the same rapidity. One generator will receive more or harder usage than another. Additions and betterments will change the rates. The result is, the maintenance expense will not vary greatly. Diversity of equipment, therefore, may be relied upon to apportion maintenance charges with comparative equality. So far as plant value is concerned, many engineers contend that the loss is greatest at the start and gradually decreases as the property ages. The benefits of imposing heavy depreciation charges at the start to offset light maintenance expense in the case of a new plant, on the other hand, are somewhat doubtful inasmuch as the income during the early operating periods is slight and the increased burden may prove a real, as well as an unnecessary, hardship.

The criticism of the straight-line method, while perhaps of great weight to the accountant, is entitled to little consideration from the regulatory standpoint, for maintenance and upkeep are operating expenses and must be treated in rate-making as wholly distinct from the depreciation charge which, though a cost element, is in the nature of a capital item rather than an expense. The criticism so far as depreciation is concerned seems superficially based upon the confusion of depreciation and efficiency. The consumers of the service during the early periods of the plant's life benefit from the use of the property fully as much as the consumers who receive service during the later periods. The theory of regulation is that the consumers during each period ought to bear a portion of the total depreciation expense relative to the service they receive from the property valued. This division of cost is accomplished by the straight-line method.

It has, moreover, the advantages of simplicity, of reasonable conformity to actual conditions, and of allowing the funds to be used for necessary additions and thus to earn a return from the business as well as provide better service.

IX. The Diminishing-Balance Method

The criticism of the straight-line method, however, has not been entirely ineffective. A system of estimating depreciation, known as the "diminishing-balance method," was originated to eliminate the objections made to the straight-line theory. This method makes annual retirances approximate annual depreciation as closely as possible. The depreciation rate under such a system, instead of being a given percentage of cost, is based on the diminishing balance of cost less depreciation. A depreciation percentage is applied to the cost new and the result deducted as the first year's allowance. The same percentage is then applied to the reduced value to ascertain the second year's allowance. The process is repeated during each year of the estimated life until only the salvage value remains unamor-

tized. The percentage under this system must be greater than under the straight-line method when the same amount is to be written off in the same length of time, for the value to which it applies is constantly decreasing.

The formula of the diminishing-balance method is extremely complicated. The burden of the depreciation is shifted, and becomes much heavier in the early years of the estimated life of the property than in the later period; on the theory that the increased burden in repairs and maintenance in the later few periods will tend to make the total annual burden substantially the same. The advantages derived from this method are theoretical rather than practical. It does not conform to the actual operating conditions in the utility field. It does not spread the burden according to the benefit received. And it could be successfully applied to accruing depreciation only where it had been honestly carried out with respect to accrued depreciation. The result is that the system has not met with favor from the regulatory commissions.

X. The Annuity Method

Another substitute for the straight-line system of estimating depreciation is known as the "annuity method." It is premised upon the theory that the cost of production should include not only maintenance, repairs, and depreciation, but also the interest on the capital invested in the asset. This method has been universally rejected by commissions and courts, because in a regulatory programme interest on investment is considered a profit to be cared for by the rate of return rather than an element of cost or a capital asset. It is not in conformity with operating conditions. The method is artificial and it writes off a greater amount during the later years of the property's estimated life than during the first years, thus maintaining an inflated value during the early periods of the plant's life and doubling the burden on the consumers who have the use of the

depreciated investment, who pay an equal or higher operating expense, and who should not pay more than an equal depreciation charge.

XI. *The Sinking-Fund Method*

The sinking-fund method of estimating depreciation has met with unaccountable approval from the utilities, but with corresponding disapproval on the part of courts and commissions generally.¹ It is based on the theory that the amounts set apart for depreciation will be invested at compound interest and the returns thus secured added to the reserve. The amount of the depreciation reserve necessarily taken from income is thus decreased by the amount of the accumulating interest. The actual provision made for depreciation by this method is lowest during the early years of the estimated life of the property and increases gradually till the retirement. This feature has material advantages. The actual wear and functional deterioration of the property follow much the same increasing line that the reserve does. The loss in efficiency of the property corresponds more closely to this plan; and the earnings from the business increase with years in a similar manner.

Theoretically the sinking-fund method of estimating depreciation possesses many advantages. Practically it is seldom applicable. It can be successfully adopted for accruing depreciation only when it has been carefully applied to accrued depreciation and the fund derived therefrom with the accrued interest is intact;² or when the actual accrued de-

¹ The Wisconsin and District of Columbia Commissions have recently developed a depreciation method midway between the straight-line and the four per cent sinking-fund theories which has received favorable consideration in many quarters. *Croty v. Tomah Elec. & Tel. Co. (Wis.)* P.U.R. 1917-A-439; *Potomac Elec. Power Co. (D.C.)* P.U.R. 1917-D-563.

² This feature of the struggle to impose the sinking-fund method upon the commissions is clearly dealt with by the Illinois Public Utility Commission, thus: "Carrying the illustration one step further, and introducing the assumption that the generator was purchased and installed completely

preciation is computed on the straight-line method, and the sinking-fund method applied to the balance. It creates a non-usable reserve which handicaps maintenance and repairs and makes the system ill-adapted to actual operation with its multitude of contingencies requiring aid from the reserve fund. It assumes that the fund will find ready investment and that the interest it will draw will be unvarying, though experience has shown that such is not the case. It withdraws the fund from the business, where under ordinary conditions it would earn a much larger return than the interest it draws. The most that can be said for the system is that, under advantageous conditions, it is susceptible of a high degree of accuracy.

XII. Miscellaneous Methods

One method of estimating depreciation is based upon a periodic revaluation or appraisal of the property. This theory has met with little approval because of its cumbersome nature and the fact that it does not apportion the burden between the consumers of the different periods of the estimated life of the property on any rational basis.

at a total cost of \$10,000, one would arrive at a present value of \$5000 by the straight-line method and at a present value of practically \$6000 by the sinking-fund method, after an expiration of ten years of the 20-year life; and, under these conditions, the annuity by the straight-line method is \$500 and by the sinking-fund method \$336. It is customary for utilities, although they have in no manner during past years provided any depreciation reserve (sinking-fund or otherwise), to ask for \$6000 in present value and, if they be consistent, \$336 for depreciation annuity to replace the generator 10 years later. Thus the utility, by its sinking-fund method, assumes the burden of \$4000 in accrued depreciation; but claims a remaining value of \$6000, which it is purposed to equalize by annual payment of \$336 for the next ten years. A short computation will indicate that ten annual payments, when compounded with interest at five per cent per annum, will yield a total of \$4200. Obviously, to institute and follow a sinking-fund theory of depreciation, merely because either a valuation proceeding or a rate case happens to be in progress, a shortage of \$1800 (or 18 per cent) in this particular illustration is inevitable. Similar shortages, in varying amounts, would occur in every item of utility equipment in the entire plant." Third Annual Report Illinois Public Utilities Commission, 1916, p. 118.

Another method is based upon the number of hours in which the property is actually used instead of the estimated life in terms of years or months. The system has some advantages from the cost accountant's viewpoint, but has no distinctive features so far as regulation is concerned.

There are multitudinous other vari-named methods of estimating depreciation which merit no specific consideration.

XIII. *The Colorado Theory of Depreciation*

The Colorado Public Utilities Commission has developed a depreciation theory of its own. Accruing depreciation is provided for in the same manner that other commissions handle the question. In the case of accrued depreciation, Colorado recognizes both the "straight-line" and "sinking-fund" methods. Both are considered fundamentally correct, and fair to the consumer and the utility alike, when properly applied. The Commission proceeds upon the theory that in determining the fair value of the property of a public utility for rate-making purposes no deduction should be made for accrued depreciation on the ground that the property is old, obsolete, inadequate, or otherwise incapable of giving good service. The exclusion from the inventory of physical property not used or useful, or not in reasonably good service condition and necessary to the operation of the property, is held to counteract sufficiently all loss in value arising from wear and tear, obsolescence, and inadequacy. Where accrued depreciation has been allowed, the Commission has based the deduction on the amount in, or which should have been in, the depreciation reserve; and made a decrease for the purpose of giving the consumers the benefit of the earnings from the fund. The Commission states its theory in the case of *Lamar v. the Inter-mountain Railway, Light and Power Company*,¹ thus:

It seems to the Commission to be self-evident that if the interest earnings on the amounts set aside annually for depreciation are

¹ P.U.R. 1918-B-98, 100.

to be credited to the depreciation reserve, the investor in the property of the public utility should receive a fair return upon the investment in the property during its useful life, regardless of its physical condition; or, in other words, if the annual depreciation requirement is estimated and set aside on the sinking-fund basis, a deduction on account of depreciation cannot properly be made in arriving at the amount upon which the investors in that property are entitled to earn a fair return.

Conversely, it is true that if the annual depreciation requirement is to be set aside on the straight-line basis — that is, if a sum is to be set aside annually which, without interest accruals, will replace the depreciable property at the end of its life, and, in addition, the consumer is required to pay a fair return on the investment in the property throughout its useful life — the consumer will have paid to the utility a sum which will be in excess of a fair return by the combined earnings of the depreciation reserve. Since, therefore, when the sinking-fund method of providing for depreciation is followed, no deduction on account of depreciation may fairly be made, it follows that, if the reserve is set aside on the straight-line basis, a sum equal to the amount in the depreciation reserve, or such an amount as the reserve might reasonably have been, had it not been disbursed in the form of dividends, should be deducted in arriving at the fair value of the property for rate-making purposes, otherwise the consumer would be required to pay somewhat higher rates under the straight-line than under the sinking-fund method.

Conceding, therefore, that fundamentally deduction on account of depreciation should be made for the reason that the consumer is entitled to such amounts as can be earned by the unexpended balance in the depreciation reserve, it follows that *deduction for depreciation should be made to give the consumer the benefit of such earnings, rather than on the theory that an old property is not as valuable for rate-making purposes as a new one.* Also, since by the very nature of a sinking-fund reserve the consumer is automatically given the benefit of the earnings of the unexpended balance in the depreciation reserve, it follows that no deduction on account of depreciation may be made when the sinking-fund method is employed.

The Colorado treatment of depreciation may be justified, but not upon the theory advanced. Such a concept of accrued depreciation cannot be reconciled with the cost-of-production basis of valuation. Accrued depreciation is

deducted from cost new to secure the rate base because the investment has been impaired to the extent that depreciation has occurred and no method of treating depreciation can alter this fact. The capital is no longer employed in the public service and, therefore, cannot earn a return. The funds in the depreciation reserve, however, may be employed in a manner that justifies the commissions in adding them to the (depreciated) value of the plant for purposes of rate regulation. When the reserve which should have been held against accrued depreciation has been paid out in dividends, it is not the loss of the interest on the fund which affects the public. There has been an actual withdrawal of investment. The property is no longer within the protection of the due-process clause. To hold otherwise is deliberately to ignore facts and seek justification by confusion of efficiency and depreciation.

When depreciation has been counted on the straight-line method and the assets invested in the securities of other companies, the capital is unimpaired, but the depreciation funds should not be included in the valuation for rate-making purposes. The assets invested in outside securities are not used or useful in rendering the public service, and therefore have no part in determining the reasonable cost of such service.

The investment has not been impaired in the case of the sinking fund when the fund is equal to the actual accrued depreciation. The utility has the investment intact. If the investment is held from the business in a sinking fund and the earnings credited to the fund, costs are reduced, the assets in the fund are in a very definite sense used and useful to the service, and the company is entitled to receive a return upon them the same as upon any other part of its investment. If, however, the fund is not intact and the money has been devoted to other uses, the utility has in effect elected to secure a return on the money other than that provided by the utility service, and no return can be allowed in the utility rates.

XIV. *The Depreciation Reserve*

The proper amount to be held in reserve to meet accruing depreciation is a debated question. The requirements of each type of utility are different. The requirements of individual utilities of the same type vary greatly. The problem is always a local and an individual one. The uniform systems of accounts drafted by regulatory bodies have for the most part left the question wholly within the hands of the management, providing only against breach of the spirit of the law by the companies. The courts have wisely taken no fixed stand upon the question. It has been widely considered in rate cases, but as an individual problem dependent upon the particular facts.

The nature of the depreciation fund, too, has been a subject of considerable controversy. Some accountants advocate a "fund," others a "reserve." Both systems have received commission sanction, though the weight of authority seems to favor the "reserve."

The character of the funds held for depreciation was not clearly understood during the early years of regulation, and many utility managers persisted in considering the funds as unrestricted profit available for dividends. The Federal Supreme Court dispelled this view by its decision in *Railroad Commission of Louisiana v. Cumberland Telephone and Telegraph Company*.¹ Reserves held against deprecia-

¹ The Court said, in part: "It was obligatory upon the complainants to show that no part of the money raised to pay for depreciation was added to capital, upon which a return was to be made to stockholders in the way of dividends for the future. It cannot be left to conjecture, but the burden rests with the complainant to show it. It certainly was not proper for the complainant to take the money, or any portion of it, which it received as a result of the rates under which it was operating, and so to use it, or any part of it, as to permit the company to add it to its capital account, upon which it was paying dividends to shareholders. If that were allowable, it would be collecting money to pay for depreciation of the property and, having collected it, to use it in another way, upon which the complainant would obtain a return and distribute it to its stockholders. That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be

tion, whatever their form, are a portion of the utility's property; but they are an encumbered property. The utility holds them in a fiduciary capacity. The money has been collected from the public for a specific purpose which imposes a sort of trust character upon the reserve. It must be held by the company for the benefit of the public as well as its own interest. The reserve can be used legitimately only for replacement of the wasting assets against which it is held. This does not, however, mean that the money represented by the reserve must be held intact during the interval pending the retirement of the original asset.

The money shown in the reserve need not constitute an actual, ever-present fund. There is no necessity of keeping the fund in the bank available for momentary use. It should be put to work until the time that it is actually needed. The method of using the fund must be optional with the management, but there would seem to be no better use than that afforded by their reinvestment in the utility business itself under the direct control of the management at a profit as well as interest. A public utility always requires a considerable supply of floating or circulating capital. The depreciation reserve may be used to meet this requirement, or the funds may be put back into the business gradually by investment in additions and betterments.

The fact that the actual funds will not be available when needed to make the replacement of the property against which they are held will not be material in either case; provided the investment in additional wasting assets has been restricted to proper capital purchases, and no part of the reserve has been used to meet maintenance requirements or other operating expenses. The money will have been actually invested in the business to meet need for new capital.

no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate; but to raise more than money enough for the purpose, and place the balance to the credit of capital upon which to pay dividends, cannot be proper treatment." (212 U.S. 414, 424, 53 L. ed. 577.)

The replacement, when it becomes necessary, therefore, may be charged as a new investment because the undertaking now requires an increase in permanent capital. The plant, however, must be valued for rate-making purposes at its depreciated value to make this use possible. Thus in the case of a plant, the original investment on which was \$10,000, with accrued depreciation of \$2000, at the date of valuation, the present worth would be \$8000. If the money had been withdrawn from the depreciation fund and used for additions and betterments, the present worth would be increased to \$10,000. If the plant was carried on the books at the original cost and the investments made from the depreciation fund had been capitalized, there would be a capitalization of \$12,000 as opposed to a present worth of only \$10,000. Such a condition could not be recognized in a valuation for regulatory purposes; but it could be avoided either by valuing the property at its depreciated value, or by refusing to capitalize the assets acquired by investment of the depreciation fund.

The money represented by the depreciation fund cannot be capitalized irrespective of the use made or to be made of it, unless the money is set aside as a specific fund and its earnings added to that fund as they accrue, because the investment back of the fund has been withdrawn from the business and is not used or useful in rendering the service.¹

XV. *Summary*

In valuing the property of a public utility for rate-making purposes the aim is to determine the present, unimpaired investment. There is no longer any denial that depreciation takes place. Both physical and functional depreciation are considered. It is immaterial what force has caused the loss in value, so long as there has been an impairment of investment. The loss is primarily that of the public. The utility is unquestionably entitled to collect the fund from

¹ Valley Natural Gas Co. (Cal.) P.U.R. 1918-C-1, 3; etc.

the consumers to keep the property intact. If, however, the utility fails to collect such a fund, or collects it and pays it out as dividends, or collects it and devotes it to a use other than the replacement of the wasting assets against which it is held, a part of the original investment has been withdrawn from the public service and devoted to another use. If the fund is collected, held intact, and credited with its earnings, it represents a legitimate investment which is made to assure continuous adequate service. In such cases it must be allowed to earn a return from the utility rates.

The proper amount of the reserve is a question of fact to be determined by the circumstances in each case. No two companies will necessarily be best served by the same depreciation figure.

The expedient method of determining depreciation is to some extent a question to be answered by the circumstance of the particular case. The straight-line method, however, has been found most widely applicable and has been adopted by a majority of the commissions. /

CHAPTER IX

THE RETURN ON THE INVESTMENT

I. *Valuation and the Rate of Return*

It may seem out of place, in a treatise on "fair value," to consider the rate of return to be allowed upon the reasonable investment shown by the valuation; but valuation and return are so interdependent in rate-making that neither can be satisfactorily considered separately.

The determination of the "fair value" of a public utility's property, in the great majority of cases, has been a step in the longer process of determining the reasonableness of rates. The limitation imposed upon legislative rate-making, by the application of the due-process clause of the Fourteenth Amendment to rate control, placed public-utility regulation on a cost-of-production basis. Modern rate control involves the fixing of rate schedules. So long as the rate fixed is a "reasonable" one, the State acts within its police power and the control is legitimate. When rates are fixed below the point which allows the utility to earn a fair return on its reasonable investment in property used and useful in the public service, the rates are not "reasonable." The power of eminent domain, not the police power, has been exercised in such cases. The State has passed a law which, if enforced, would take service for the public use, to the value of the difference between the rate fixed and the fair worth of the service which would be rendered. The law is unconstitutional because it contains no provision for payment for the property which would be taken if the law were enforced.

A reasonable rate, under this forced construction of due process, consists of several elements. It must give to the utility cost of service, plus interest on investment, plus

profit. Valuation determines the first of these elements. The rate of return determines the second and third.

II. *The Development of the Return Question*

The decisions of the Supreme Court relative to the fair rate of return show the same gradual change that marked the development of the valuation doctrine. They started with the holding in the Granger Cases that the Court is without jurisdiction to consider legislative-made rates at all. The development of the doctrine of judicial review brought the question of rate reasonableness, and with it the return issue, to the front. The early cases did not seem to detect the necessary connection between return and reasonableness. The Court was feeling its way. The justices doubted their power to question legislative judgment. Any return above operating expenses and depreciation which the legislature might deem expedient was considered sufficient. The Court seemed unwilling to interfere.

The question of return came before the Court specifically first in *Reagan v. Farmers' Loan and Trust Company*,¹ wherein Justice Brewer said:

It is unnecessary to decide, and we do not wish to be understood as laying down an absolute rule, that in every case a failure to produce some profit to those who have invested their money in the building of a road is conclusive that the tariff is unjust and unreasonable. And yet justice demands that every one should receive some compensation for the use of his money or property, if it be possible without prejudice to the rights of others.

The Court then proceeded to point out that there may be circumstances justifying rates which produce no return for the operator on account of extravagant expenditures, waste in management, unjustifiable salaries, poor judgment in location or time of construction, etc.

The issue was presented next in *Stanislaus County v. San Joaquin and Kings River Canal and Irrigation Com-*

¹ 154 U.S. 362, 14 Sup. Ct. 180, 38 L. ed. 1014.

pany,¹ wherein the Court held that it was not confiscation, nor denial of equal protection of the laws, to fix water rates which would produce a return of six per cent upon the value of the property actually used in rendering the service.

In *Willcox v. The Consolidated Gas Company*² the Court considered the question again, saying:

There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality. Among other things, the amount of risk in the business is a most important factor as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them.

The Court held that six per cent was a reasonable return on property employed in rendering gas service.

In *Knoxville v. The Knoxville Water Company*³ the Court declined to consider whether four per cent was a fair return on water works property, because the evidence was not clear that the return would be reduced to this point.

No definite rule as to the amount of the return or the elements necessarily included in it has been laid down. Each case necessarily has been decided on its own facts.

The early decisions held the utility to a low rate of return, but the valuations were not strictly made. The later commission cases have been more painstaking in the valuation and more liberal in the rate of return. The courts have always been more lax in their valuation and less liberal in the return allowed than the commissions.

III. *Elements involved in the Return*

There has been considerable confusion among writers upon utility rates and valuation, as well as in the decisions,

¹ 192 U. S. 201, 26 Sup. Ct. 241, 48 L. ed. 406.

² 212 U. S. 19, 29 Sup. Ct. 192, 53 L. ed. 382. ³ 212 U. S. 1.

as to what constitutes the rate of return. Mr. H. G. Barker says:¹

It is obvious that capital will flow into a field, if it secures (1) ordinary local interest return, plus (2) compensation for business risks, plus (3) some reward for the actual attention required from the investor, and plus (4) the possibility of more or less profit above these other factors which partake much of the nature of mere wages of capital and capitalists.

This classification is somewhat more minute than practical. The courts and commissions have seldom troubled themselves with such delicate distinctions. They have uniformly held that two principal elements, interest and profits, are involved in the return.²

The sum of interest and profit, though not fixed by law, is necessarily limited by economic rules so long as the undertaking is dependent upon private capital. The return must be equal that available in other industries where the risk is the same, or maintenance will be neglected, additions and betterments postponed, and eventually the capital will be drawn from the utility field. It is true that the conduct of the utility by private capital is a public undertaking, and that society as a whole has a direct proprietary interest in the profits, but it is equally true that such interest is non-enforceable below the point of return offered by equally safe investments. The only way in which society can reduce the return below that point is by decreasing the

¹ *Public Utility Rates* (1917), p. 96.

² A Federal Court states generally the considerations involved in the rate of return, thus: "In fixing the measure of return upon property devoted to public use, regard should be had to the character of the business, the locality and the risk, whether the return will be uniform and secure; whether the patronage is steady or fluctuating and quickly responsive to financial and commercial changes, interest rates legal and contractual and the rates customarily sought and required in like investments in the locality; if a railroad, the character of the traffic, whether largely of a kind dependent upon uncertain conditions or so diversified that causes affecting part will not greatly affect the whole." *Missouri, Kansas & Texas Railway Company v. Love*, 177 Fed. 493, 502.

risk and with it both the interest and profit elements. If the social interest in profits is to be fully collected, society must take over the business and directly assume the risks.

IV. *The Interest Element in the Return*

Rate valuation is but a step in the determination of the cost of producing the service. The angle from which the question is approached, however, is not the same in public-utility and industrial cost problems. For this reason rate valuation has been able to avoid the scholastic conflict stirred up by the Harvard school of accountants as to the expediency of including interest in cost figures. Interest has been uniformly excluded from operating expenses and treated as a part of the return by commissions and courts. So far as regulation is concerned there is absolutely no difference between interest and profit, other than the nature of the elements on which their allowance is premised. Provision for neither is mandatory in the absence of reasonableness in expenditures, location, etc. Both must be provided for when operation has been above reproach. Money cannot be secured for any undertaking unless a certain annual percentage or pure interest is paid for its use, but this is equally true of profit.

The interest element of the return was commonly fixed by the courts, in the early cases, at the legal rate.¹ The later cases have realized that the interest rate itself is affected by the risk and many other elements, and the tendency has been to consider the rate of return as a whole, rather than to separate it into its unit parts.

¹ *Pennsylvania R.R. Co. v. Philadelphia Co.*, 220 Pa. St. 100, 68 Atl. 676, 15 L.R.A. (N.S.) 108; *Louisville & Nashville R.R. Co. v. Brown*, 123 Fed. 946; *Columbus Railway & Light Co. v. Columbus*, U.S. Circuit Co. (So. Dist. Ohio) Eq., No. 1206; *Central of Georgia Railway Co. v. Railroad Commission of Alabama*, 161 Fed. 925; *People ex rel. Jamaica Water Supply Co. v. Tax Comm.*, 196 N.Y. 39; etc.

V. *The Risk Element in the Return*

The element of risk, as applied to present-day conditions, has received unmerited attention in discussions of the rate of return. The hazard element is dual. The "risk" for which the rate of return provides compensation may be defined as the inherent hazard of the public service which subjects the investment therein to liability of loss. Beside this there is another class of risks due to possible faults of management. Risks of the first type must be considered when they are present, and there are many elements of such risk involved in every public-utility operation; but there is probably no other business which is quite so free from the ordinary industrial risks as the public-service undertaking.

The operation of the risk element is the same in the utility field as elsewhere. Any element which decreases the probability of a steady or adequate return must be considered in fixing the rate. Thus the character and needs of the consumers, the location, the possibility of developing the territory at reasonable cost, the presence of substitute service, the possibilities of development in the industry, actual competition, etc., mistakes in construction and operation, accidents, poor judgment, unexpected failure of demand, inability to establish financial connections, and similar opportunities for loss are commonly encountered.

The greatest industrial risks occur in the competitive field and result from the incessant struggle between producers, price wars, over-production, the unsettled state of the industry, market fluctuations, and changing methods of production. These risks have for the most part been eliminated in the public-utility field.

The recognition of regulated monopoly, and the extensive elimination of competition, have done much to make public-utility investments secure and the return on them uniform and certain. Many circumstances have combined to create a stable, uniform, constantly increasing demand for service.

The second type of "risks" are those which arise from poor judgment, improper organization, poor location, bad management, unsound financial policies, etc., rather than from any danger inherent in the undertaking itself. Such risks truly affect both the interest and profit elements of the return, but they are properly treated in a regulatory programme as a distinct factor in return, namely, "the reward for efficient management."

The industrial risk is susceptible to approach from three angles, the risk when the original investment was made, the risk as reflected by current market reports on the company's bonds and the present estimated risk in case of re-production.

The first approach has been uniformly rejected. Experience has taught that the past return has in most cases amply compensated the utility for the original hazard.¹ Where this has not been true most commissions have preferred to include the early risk in the allowance for going value. The nature of the hazard is not such as to warrant perpet-

¹ It does not seem out of place to suggest also that many of the early utility risks were assumed for expected return other than that to be derived from the legitimate operation of the business. A number of America's great fortunes are monuments to the early risk in the public-service field. Few of the gigantic risks so often referred to in the case of the railroads were assumed without provision for tenfold return from the development of land held by the profiteers, without government aid which in itself was ample guarantee against the risk assumed, or with a view to multiplying return by financial manipulation, reorganization, etc. The fact that the payment for the risk may have been misapplied or that present holders who purchased during the boom took their stock after the "melon" was cut can scarcely be considered justification for collecting for the risk a second time.

This same line of thought leads to the conclusion that many of the elements of risk have been self-imposed. Thus the report of W.A. Gunter, special master in the South & North Alabama Case, 197 Fed. 595, at page 84, says: "Railroad business is confessedly more than an ordinarily risky one. The roads seldom have escaped receivership and bankruptcy proceedings." Chapters of Erie and memories of the Alton Reorganization aid much in understanding these failures and bankruptcies, and are potent arguments against over-estimation of the risk element in return.

uation of a return based upon it long after the risk has ceased to exist. Early risks and early losses must be amortized, not permanently capitalized against the public. And, as already explained, they can be considered only on a conclusive showing that they actually existed, that the taking of the risk was reasonable, and that no reparation has been made.

The second figure is that which would make the market value of the securities substantially equal to the real investment. This theory has not been definitely stated by the commissions, but seems to have been acted upon in several cases.

The third angle, from which the question of return is approached, is that along which the general economic forces shaping industrial return in the competitive field commonly move. It has been universally accepted in the case of utilities, however, not because it fits the regulatory theory best, but because the institution of private operation forces its adoption. So long as capital can secure a higher return at equal risk elsewhere it will not be invested in the utility field.¹

VI. *The Rate of Return*

Public-utility risks have been reduced to a minimum, and the reduction has eliminated the necessity for speculative profits. It is not necessary to offer large returns or to permit speculation or manipulation of securities to attract

¹ This phase of the problem is clearly stated by the New York First District Commission in *Queens Borough Gas & Electric Company*, 2 N.Y. P.S.C. (1st Dist.) 544, thus: "Various standards have been suggested for determining the fair rate of return. The one which in our opinion is properly applicable to this case is that the rate should be such that investors would be induced to provide the funds with which to construct and extend a gas and an electric plant within the area in question. If the State were to fix a rate below this standard, capital could not be secured. If investment were made before the State acted, the original capital might be forced to remain, but additional capital could not be secured unless necessary to protect the first outlay."

capital to-day. Government bonds bearing three per cent interest sell at a premium in normal times, and two per cent federal securities are quoted around ninety-nine.¹ City and county bonds ordinarily are readily sold at five per cent and command a premium at six. State bonds, and the securities of the more substantial railroad and industrial corporations, bearing interest at four and a half per cent, sell at par. And the seven per cent preferred stock of such companies usually nets six per cent on the market price. Savings banks pay three and four per cent. And the legal rate of interest is usually from five to seven per cent. The interest rate is universally low where the risk to the investment is small and the return certain.

It is clear from this survey that the interest rate is a variable item. Where capital moves freely the rate varies from day to day with the money market quotations. The interest rate, if separately fixed, is purely a matter of business judgment. Usually no attempt is made to determine it apart from the total return.

The allowance in addition to the interest rate necessary to provide a fair return on the investment need not be large. The average public utility is financed to a great extent by bond issues. The bondholders receive a stipulated per cent on their funds which is materially below the return received by the utility. A rate of return, on the total value of the property, but slightly greater than the interest rate on the bonds, will afford a relatively high dividend because the profit earned on the borrowed capital will be distributed among the stockholders. Thus, where one half of the capital has been secured by bonds bearing five per cent, a seven per cent return on the valuation will allow a nine per cent dividend. If the bond interest was six per cent, an eight per cent return would afford a ten per cent dividend, etc.

¹ The interest rate, of course, is far from normal during the present crisis. The figures given are based upon estimated normal conditions.

No definite figure of return can be stated. Any general deduction from the decisions would be most misleading because the elements considered in the return vary with the method of valuation used, with the financial policy which the utility has pursued, and with the managerial ability which it has displayed.

VII. *Duplication in Valuation and Return*

The amount to be allowed in the return must necessarily be influenced by many elements, in addition to the financial policy of the utility, which are peculiar to the particular case. The elements to be considered must be determined to a large extent by the valuation methods employed. Many questions considered in connection with the determination of the fair value of the property are encountered again in the consideration of the return. Development costs, going value, and franchise value are the principal items considered in connection with the "risk-of-the-undertaking" element in the return. If such values have been fully included in the valuation they cannot be allowed a second time as a factor in the rate of return, irrespective of the terms under which they are suggested. If early losses have been considered in an allowance for going value, the investor has been practically compensated for the risk he assumed, and the return need cover little more than pure interest. In short, if the risk element has been provided for under any allowance in the valuation, it is eliminated from consideration in the return.

VIII. *Reward for Efficient Management*

One of the principal elements which makes the return vary to meet the facts of the particular cases is the necessity for rewarding efficient management. The rate of return is a sort of regulatory balance wheel. Valuation is necessarily inaccurate and inflexible. The fixing of the return affords the commission an opportunity to consider the equi-

ties of the case and make regulation an aid, not a burden to operation.

When a utility has rendered adequate and efficient service in an enterprising, up-to-date manner, has met the standards fixed by the regulatory body, and otherwise satisfactorily discharged its duties toward the public, the rate of return must recognize the efficiency and reward it to the same extent that the same degree of managerial ability exerted in other lines of industry would be rewarded. A well-managed, progressive utility, which has taken every step to render adequate service at the lowest cost, to develop its territory and maintain amicable relations with its consumers, must be allowed a greater return than a utility which has been inefficiently managed.¹

Careless and inefficient management has been actually penalized.² Thus, in *Re Monmouth Public Service Company* the Illinois Public Utilities Commission said:

This Commission has heretofore taken the position that financial rewards in public-utility enterprises should be commensurate with the ability displayed in their management, and rates of return approximating seven per cent have been frequently permitted in cases wherein the stewardship appeared competent. In the case at bar, the record discloses that normal ability has not been displayed in the management of petitioner's gas property and the standards of service have not been complied with, and to assume mediocre stewardship is entitled to the same rewards as capable conduct of affairs is to enunciate a doctrine at variance with the sum of human experience and with principles well recognized in the business world.

The reward for managerial ability and economical operation is but the injection into the regulatory programme of a substitute for the incentives offered individual initiative in the absence of rate regulation.

¹ *Warren Light & Power Co.*, 5 Ill. P.U.R. 72; *Union Gas & Elec. Co.*, 5 Ill. P.U.R. 205, etc.

² *Little York Elec. Co.*, 5 Ill. P.U.R. 80, P.U.R. 1918-B-120; *Monmouth Public Serv. Co.*, 5 Ill. P.U.R. 229; etc.

IX. *Allowance for Surplus*

Following the report of the Railroad Securities Commission to the President in 1911, the utility companies throughout the country, particularly the railways, sought to enforce the incorporation in the return of an allowance to create a "reserve" or surplus to provide for "improvements which add nothing to the earning capacity of the property and ought not to be the basis of increased capital liability."¹

Such an allowance cannot be justified under any conceivable theory of regulation. It would force the public to donate exchange value to the railway, without any return for the compulsory gift, on the theory that the asset could not be included in the rate base. If the expenditure is reasonably necessary to permit or promote efficient service, there is no rule of valuation which would exclude it in rate cases. If the expenditure is such that it does not add to the service, and is not beneficial to the consumers, there can be no justification for taxing it against the consumer, especially where the service rendered is public. If such an expenditure can be truly justified on any ground, it will be provided with ample return by the allowance for efficient management.

X. *Summary*

The consideration of the rate of return closes the study of fair value. It fixes definitely the place of valuation in regulation. It clarifies many of the problems of valuation. The determination of the rate of return supplements the valuation and both are subsidiary to the final issue, the reasonableness of rates. Many of the problems of valuation have been raised by the lack of understanding of the elements of return. It is doubtful, for example, whether the dispute over going value would have ever assumed the proportions it has if the return to be allowed upon the fair value of the

¹ Report of Railroad Securities Comm. (1911), p. 30.

property had been understood by commissions and utilities alike. The same is true of franchise value.

The rate of return acts as a balance wheel to make regulation run smoothly by adjusting the more or less arbitrary rules to the individual cases, and by counteracting so far as possible the dangers from the inevitable inaccuracies in the estimates of value. It assures the investor interest on his capital proportionate to the risk he assumes, and in addition thereto a fair profit which is proportionate, not only to the risk, but to the quality of the service and the nature of the management.

Regulation seeks to secure the advantages of both competition and monopoly. Valuation keeps the rate near the reasonable cost of production and allows the economies of monopolistic operation. The rate of return provides the incentive for individual initiative which regulation would destroy if rates were based on absolute cost.

CHAPTER X

CONCLUSION

THE diversity of subject-matter, the necessity of considering the divers theories of many independent jurisdictions, and the confusion in valuation law and practice render any consideration of "fair value" unavoidably incoherent. It seems desirable, therefore, in concluding a study of this subject, to direct attention to the fundamental principles of valuation, its aims, and the general trend of commission action, with a view to leaving the reader with a concise idea of the nature of "fair value."

Confusion will be avoided if the following preliminary points are kept in mind:

- (1) That the public utility is essentially different from other industry;
- (2) That private property devoted to the public use is not the same as other private property, and does not enjoy the same legal protection;
- (3) That the service rendered is governmental in its nature, and;
- (4) That the purpose of regulation is curtailment of "private rights" and the encumbrance of "private property."

"Fair value" is concerned chiefly with rate value, for that value exercises a direct effect on all value for regulatory purposes.

Modern rate-making is a type of cost-finding, for rates are based directly on the cost of the service. That cost is made up of three items, material, labor, and burden. Rate-making considers the first two elements in the allowance for operating expenses.¹ Valuation deals with the burden

¹ Rent may be an operating expense, but where the utility owns the building and collects a return on the investment in it, it cannot collect a second return as rent. Interest and bond discount are included in the return, not in the operating expense.

or "expense" element. An appraisal or valuation is necessary in cost-finding for two reasons. It shows burden, and it is the basis on which return is figured. It may clarify matters to state the rate elements in equational form, thus:

$$\begin{array}{ll}
 (\text{material} + \text{labor} + \text{maintenance} + \text{depre-} & \\
 \text{ciation} + \text{taxes} + \text{insurance}) & = \text{operating expenses} \\
 (\text{working capital} + \text{depreciated value of} & \\
 \text{physical and intangible property}) & = \text{fair value} \\
 (\text{interest} + \text{profit}) & = \text{rate of return} \\
 \text{operating expenses} + \frac{\text{fair value}}{\text{rate of return}} & = \text{reasonable rate.}
 \end{array}$$

The appraisals in regulatory and industrial cost-finding, while they serve the same purpose, are drawn on different lines. Industrial and public-utility valuation are inherently different. The appraisal of the industrial plant, under competitive conditions, involves no question of public interest in profits, in management, or in service. When monopoly exists, the public interest is not the same as that affecting the public-service company. Industrial valuation usually seeks to determine market value. Public-utility valuation, though it may consider market value, can never be based upon it alone, for rate value is not based on market value and all regulatory value is influenced by the rate base.

The two valuations differ even when cost of production is the ultimate question. In one case a speculative undertaking is considered, in the other speculation is excluded. The treatment of appreciation, depreciation, experiment, provision for the future, property not used or useful, apportionment of expenses, and many other items is necessarily different in the two cases. The private property of the public utility is burdened with a serious encumbrance which materially decreases its value. No similar encumbrance exists in the case of the industrial plant.

The cost of production sought in the two cases is itself dissimilar. The industrial plant figures show actual cost. The regulatory figures show reasonable cost.

The general economic principles applicable in the unregulated industrial field do not necessarily have application in either the monopolistic industrial field, under present regulatory conditions, or in the public-utility field. Values and prices in the one case are economic; in the other, legal. The governmental character of the service and the recognition of monopoly set in operation political and legal forces which render the situation wholly dissimilar to that in the general field of business. The *laissez-faire* rules of the general field do not apply to the anti-monopoly aims of regulation in the monopolistic industrial sphere, nor to the regulated monopoly conditions of the public-utility field. Economic rules, founded on competition as the principal regulatory force, have failed to direct the political and legal forces which sweep the utility sphere. Those forces must, therefore, shape the economic rules.

The first of the *laissez-faire* economic concepts which is swept away by political and legal interpretation is the individualistic idea of private property. In its place is set up the social concept which recognizes an extensive public interest in property. The stage has not been reached where this interest is fully developed. The delegation of the governmental function to private individuals, to transfer the risk of the undertaking to private capital carries with it as effective a check upon the social theory of property and upon regulation as the individualistic economic and legal theories themselves. So long as the business is dependent upon private capital, the individualistic interests must be extensively recognized to attract capital.

The second of the economic theories to fall by the way-side is the value concept. "Value" in regulation does not mean "economic" or "exchange" value because regulatory value is based on rate value, and to measure rate value by capitalized earnings, as exchange value is measured, involves the vicious circle. The fair value of the public-utility property for rate-making purposes is the present unim-

paired reasonable investment in property used and useful in rendering the public service.

The next idol overthrown is the competition panacea. The superficial assumption that the monopolistic nature of the public utility is the basis of the distinction between public and private service, and the equally superficial conclusion that regulation is but a substitute for competition, are, perhaps, responsible for more confusion in valuation than all other theories combined. Such an approach to regulation problems predestines the study to failure, for it can only mean the application of *laissez-faire*, individualistic rules to a sphere created for the express purpose of avoiding the operation of those rules. Competition is based upon private interest. Regulation is based upon public interest.

The development of the valuation theory is but the slow swing of the conservative arm of the law to meet the changed ideas of that body which moulds the law. The State Public Utilities Commissions, in direct contact with the situation, bound by no volume of precedent, bowed beneath the weight of no judicial conservatism, and held in check by no formal procedure, have far outdistanced the courts. A consideration of the comparatively few recent cases in courts of last resort indicates that the path blazed by the commissions will be followed by the courts when possible.

SELECTED BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

GENERAL WORKS AND PAMPHLETS

- ALLISON — Should Public Service Properties Be Depreciated?
BAILLY — The Legal Basis of Rate Regulation.
BARKER — Public Utility Rates.
BEALE & WYMAN — Railroad Rate Regulation. 2d Ed.
Briefs filed with the Interstate Commerce Commission, Valuation Division.
COLLIER — Public Utilities.
COLLINS — The Fourteenth Amendment and the States.
COTTON — An Argument Against Official Valuation of Railroad Properties.
ERICKSON — Valuation of Public Utilities.
FLOY — Valuation of Public Utility Properties.
FOSTER — Engineering Valuation of Public Utilities.
HALE — Valuation and Rate-Making.
HAYES — Public Utilities, Their Cost New and Depreciation.
— Public Utilities, Their Fair Present Value and Return.
McFALL — Railway Monopoly and Rate Regulation.
McGEHEE — Due Process of Law.
REEDER — Validity of Rate Regulations.
SMALLEY — Railroad Rate Control.
TAYLOR — Due Process of Law.
VANDERBLUE — Railroad Valuation.
WHITTEN — Fair Value for Rate Purposes.
— Valuation of Public Service Corporations.
WILCOX — Principles as to Franchise Values.
WYMAN — Public Service Corporations.
— Railroad Valuation and Rates.
YOUNG — Depreciation and Rate Control.

ARTICLES IN PERIODICALS

- ADAMS — Valuation of Public Service Utilities. 11 Am. Econ. Ass'n Quarterly, 184.
ALLISON — Ethical and Economic Elements in Public Service Valuation. 27 Q.J. Econ. 27.
BAKER — Valuation of Terminal Lands. 8 Journal of Accountancy, 239.

- BAUER — Depreciation and Rate Control. 29 Q.J. Econ. 362.
- BONBRIGHT — Depreciation and Rate Control. 30 Q.J. Econ. 546.
- BRINCKLEY — Why Appraisal is not Valuation. 72 Eng. Rec. 515.
- BUTLER — Valuation of Railway Property for Purposes of Rate Regulation. 23 J. Pol. Econ. 17.
- DAVIS — Depreciation and Rate Control. 29 Q.J. Econ. 362.
- DELANO — Application of a Depreciation Charge. 16 J. Pol. Econ. 585.
- EDGERTON — Value of the Service as a Factor in Rate-Making. 32 Harvard L. Rev. 516.
- GRAY — How Does Industrial Valuation Differ from Public Utility Valuation. Utilities Magazine, January, 1917, p. 26.
- GRAY — The Vagaries of Valuation. 4 Am. Econ. Rev. 18.
- HALE — The Supreme Court's Ambiguous Use of "Value" in Rate Cases. 18 Col. L. Rev. 208.
- HANSEL — State Valuation of Railroads. 185 N. Am. Rev. 485.
- HAYES — Original Cost *v.* Replacement Cost. 25 Q.J. Econ. 616.
- HEILMAN — Principles of Public Utility Valuation. 28 Q.J. Econ. 269.
- HENSHAW — State Railway and Public Service Commissioners on Railway Valuation. Utilities Magazine, March, 1916, p. 4.
- RIGGS — Problems of Railroad Valuation. 13 Columbia L. Rev. 582.
- RIPLEY — Physical Valuation of Railroads. 29 Q.J. Econ. 569.
- ROBINSON — Legal, Economic and Accounting Principles Involved in the Judicial Determination of Railway Passenger Rates. 16 Yale Rev. 355.
- SAKOLSKI — Valuation of Railroad Right of Way. 6 Am. Econ. Rev. 288.
- SWAYZE — Regulation of Railway Rates Under the Fourteenth Amendment. 26 Q.J. Econ. 389.
- THELEN — Public Utility Rates, a Just and Scientific Basis. 2 Cal. L. Rev. 1.

TABLE OF CASES

TABLE OF CASES CITED

Advance on coal to lake ports, In Re, 22 I.C.C. 604.....	84
Aldnut v. Inglis, 12 East. 527.....	11
Alleghany Valley St. R.R. Co. v. Greco, (Pa.) P.U.R. 1917-A 723..	14
American U.T. Co. v. Western U.T. Co., 67 Ala. 26.....	20
Ames v. Union P. Ry. Co., 64 Fed. 165.....	58, 88, 110
Ann Arbor R. Co. v. Fellows, 236 Fed. 387.....	177
Apple v. Brazil, (Ind.) P.U.R. 1915-C 561.....	134, 154
Appleton v. Appleton Water Works Co., 5 W.R.C.R. 215. 110, 116,	191
Appleton Water Works Co., In Re, 6 W.R.C.R. 97, Affd. 154 Wis.	
121.....	159
Ardmore Water Case, I.P.U.C. No. 4670.....	83
Ashland v. Ashland Water Co., 4 W.R.C.R. 273.....	134
Atlantic Coast Line v. N.C. Comm., 206 U.S. 1, 51 L. ed. 933.....	33
Banker v. L.D. R.R. Co., 89 Hun., (N.Y.) 202.....	16
Bay State Rate Case, In Re, (Mass.) P.U.R. 1916-F 221. 136, 144, 167	
Bee Bldg. Co. v. Savage, 91 N.W. 716, 65 Neb. 714.....	63, 79
Beekman v. Saratoga, etc. R.R., 3 Paige 45.....	16
Belcher, etc. Co. v. St. Louis G.E., 101 Mo. 192, 13 S.W. 822, 8 L.R.A.	
801.....	21
Beloit v. Beloit Water, Gas & Elec. Co., 7 W.R.C.R. 187.....	134
Berlin Elec. Light Co., In Re, 3 N.H.P.S.C. 174. 95, 110, 115, 146,	173
Birmingham Mineral R.R. Co. v. Parsons, 100 Ala. 662, 13 So. 602.	20
Bloodgood v. Mohawk & H. R.R., 18 Wendell. 1.....	16
Blue Hill St. R. Co., (Mass.) P.U.R. 1915-E 370.....	174, 204
Bluefield v. Bluefield Waterworks & Imp. Co., (W. Va.) P.U.R.	
1917-E 22.....	117
Bd. of Trade v. Mountain Home Tel. Co., (N.Y. 2d Dist.) P.U.R.	
1916-C 688.....	133
Bogart v. Wisconsin Tel. Co., (Wis.) P.U.R. 1916-C 1020.....	84, 110
Bonbright v. Corporation Comm. of Arizona, 210 Fed. 44.....	153
Boston Beer Co. v. Massachusetts, 97 U.S. 25.....	20
Bound Creek Water Co., In Re.....	84
Boyd v. Alabama, 94 U.S. 645.....	19
Bradley v. Ohio River, etc. R.R. Co., 78 Fed. 387.....	16
Brass v. N. Dakota, 153 U.S. 391, 14 Sup. Ct. 857, 38 L. ed. 757...	21
Bridgeport Natural Gas & Oil Co., In Re, (W. Va.) P.U.R. 1916-C	
253.....	84, 136
Bronx Gas & Elec. Co., In Re, (N.Y.) P.U.R. 1916-A 440.....	118, 136
Bronx Gas & Elec. Co., In Re, (N.Y. 1st Dist.) P.U.R. 1917-D	
777.....	110
Brunswick & T.W. Dist. v. Maine Water Co., 99 Me. 371.....	84, 101
Brymer v. Butler Water Co., 179 Pa. 231, 36 Atl. 249.....	136
Budd v. New York, 143 U.S. 517, 12 Sup. Ct. 468.....	16, 21, 54
Buel v. Chicago, M. & St. P. Ry. Co., 1 W.R.C.R. 324.....	133
Buffalo Gas Co. v. Buffalo, 3 P.S.C. 2d Dist. (N.Y.) 553.....	110, 134

Butchers' Union Slaughter House Co. v. Crescent City Live Stock Landing Co., 111 U.S. 746, 16 Wall. 36.....	20
Butler v. Lewiston, A. & W. St. Ry., (Me.) P.U.R. 1916-D 25	
	32, 84, 110, 199
Camara De Comercio v. Manila Elec. R. & L. Co., (P.I.) P.U.R. 1915-D 977.....	84, 174, 181
Campbell v. Hood River Gas & Elec. Co., (Or.) P.U.R. 1915-D 855	
	101, 154, 166, 174, 206
Capital City Gaslight Co. v. City of Des Moines, 72 Fed. 829.....	105
Cayuga Power Corp. (N.Y.) P.U.R. 1917-E 915.....	14
Cedar Rapids G.L. Co. v. City of Cedar Rapids, 223 U.S. 665, 32 Sup. Ct. 389.....	182
Central of Ga. Ry. v. R.R. Comm. of Ala., 161 Fed. 925.....	224
Central of Ga. Ry. v. R.R. Comm. of Ga., U.S. Dist. Ct. Middle Dist. Ala. No. 261, Equity.....	133
Central Pacific R. Co., In Re, (Cal.) P.U.R. 1916-B 845.....	108, 166
Charleston v. Omro Elec. L. Co., (Wis.) P.U.R. 1915-B 1.....	136
Charles Town Water Co., In Re.....	84
Chesapeake & P. Tel. Co., (Md.) P.U.R. 1916-C 925.....	167, 199
Chicago & G.T.R.R. v. Wellman, 143 U.S. 412, 12 Sup. Ct. 400, 36 L. ed. 176.....	20, 54
Chicago & Northwestern Ry. Co. v. Smith, 210 Fed. 632.....	150, 177
Chicago, B. & Q. R.R. v. Chicago, 166 U.S. 226, 17 Sup. Ct. 581..	56
Chicago, B. & Q. R.R. Co. v. Iowa, 94 U.S. 155, 24 L. ed. 94.....	9, 47
Chicago, etc. R.R. v. Dey, 35 Fed. 866.....	60
Chicago, Milwaukee & North Shore Elec. Ry. Co., In Re, P.U.R. 1918-A 388.....	144, 151, 174, 206
Chicago, Milwaukee & St. P. Ry. Co. v. Ackley, 94 U.S. 179, 24 L. ed. 94.....	9
Chicago, M. & St. P. Ry. Co. v. Minnesota, 134 U.S. 418, 10 Sup. Ct. 462.....	20, 52
Chicago, M. & St. P. Ry. Co. v. Tompkins, 176 U.S. 167, 44 L. ed. 418, 20 Sup. Ct. 386.....	20
Chicago North Shore Elec. Ry. Co., (Ill.) P.U.R. 1918-A 388	
	144, 174, 206
Citizens' Tel. Co., In Re, (Ind.) P.U.R. 1919-B 352.....	174
City Water Co., In Re, (Mo.) P.U.R. 1917-B 624.....	174
Cleveland, Cin., Chi. & St. L. Ry. Co. v. Backus 154 U.S. 439.....	178
Clyde v. Richmond & D.R. Co., 57 Fed. 436.....	84
Coke Products Ass'n of Connellsville v. B. & O. R. Co., 27 I.C.C. 125.....	84
Coles Co. T. & T. Co., In Re, I.P.U.C. Nos. 7280, 7313.....	14
Colorado F. & I. Co. v. Southern P. Ry., 6 I.C.C. 489.....	33
Colorado Springs Light, Heat & Power Co., In Re.....	84
Columbia v. Watts Engineering Co., (Mo.) P.U.R. 1915-B 921	
	168, 169, 170
Columbus Ry. & L. Co. v. Columbus, U.S. Cir. S.D. Ohio Eq. No. 1206.....	224
Commercial Club v. Citizens G. & L. Co., (Ind.) P.U.R. 1916-E 1	
	110, 134
Commercial Club v. Mo. P. Util. Comm., (Mo.) P.U.R. 1915-C 1017.	88
Commercial Club v. Terre Haute Waterworks, (Ind.) P.U.R. 1916-B 180.....	134

TABLE OF CASES

245

Commission Cases, 116 U.S. 307, 6 Sup. Ct. 334.....	48, 51, 53, 62
Consolidated Gas Co. v. Wilcox, 157 Fed. 854.....	111
Corona v. Corona Home T. & T. Co., (Cal.) P.U.R. 1915-F 1014.....	173, 193
Cotting v. Goddard, 183 U.S. 79, 22 Sup. Ct. 30.....	22
Cotting v. Kansas City S. Yd. Co., 82 Fed. 850.....	58, 90
Covington Turnpike R.R. v. Sanford, 164 U.S. 578, 17 Sup. Ct. 198.....	20, 55, 58, 60, 72
Cripple Creek Water Co., In Re, (Cal.) P.U.R. 1916-C 788.....	110, 117, 171
Croty v. Tomah Elec. & T. Co., (Wis.) P.U.R. 1917-A 439.....	211
Crownover Telephone Co., In Re, (Neb.) P.U.R. 1915-E 571.....	88
Culver v. St. Joseph & C.I. Ry., (Mo.) P.U.R. 1917-B 542.....	16
Cumberland T. & T. Co. v. Louisville, 187 Fed. 637.....	203
Danville v. Danville Water Co., 178 Ill. 299, 53 N.E. 118, 60 Am. St. Rep. 304.....	20
Darlington Elec. Light & Water Power Co., In Re, 5 W.R.C.R. 397.....	130
Delaware, etc. R.R. v. Central Stock Yd. Co., 45 N.J. Eq. 50, 6 L.R.A. 855.....	21
Denver v. Denver Union Water Co., 62 L. ed.....	189
Des Moines Gas Co. v. Des Moines, 199 Fed. 204.....	115
Des Moines Gas Co. v. Des Moines, 238 U.S. 113, 59 L. ed. 1244.....	158, 182, 189
Des Moines Water Co. v. Des Moines, 192 Fed. 193.....	203
Dow v. Beidelman, 125 U.S. 680, 8 Sup. Ct. 1028.....	51, 56, 58
Dunham, In Re, (Mo.) P.U.R. 1916-E 544.....	110, 116, 174
East Bakersfield Imp. Ass'n v. San Joaquin L. & P. Corp., (Cal.) P.U.R. 1916-C 830.....	155
East Hartford v. Hartford Bridge Co., 10 How. 511.....	19
Edwards v. Glen Tel. Co., (N.Y. 2d Dist.) P.U.R. 1916-B 940.....	116, 167
Ely, City of, v. Ely Light & Power Co., (Nev.) 24 Comm. Leaf. 578.....	154
Express Rates, Ind. R. Comm. No. 495.....	79
Fall River Gas Works v. Bd. of Gas & Elec. L. Comm. 214 Mass. 529, 102 N.E. 475.....	136
Freeport Water Co. v. Freeport, 186 Ill. 179, 57 N.E. 862.....	20
Ft. Supply T. & T. Co. v. Pioneer T. & T. Co., P.U.R. 1917-A 188.....	38
Fuhrmann v. Cataract Power & Conduit Co., 3 P.S.C. 2d Dist. N.Y. 656.....	79, 88, 146, 181
Galena Water Co. v. City of Galena, 74 Kan. 624, 87 Pac. 735.....	179
Geer v. Baltimore & Ohio R. Co.....	84
Georgia R. & Banking Co. v. Smith, 128 U.S. 174, 9 Sup. Ct. 47, 32 L. ed. 377.....	20, 52
German Alliance Ins. Co. v. Lewis, 233 U.S. 389, 34 Sup. Ct. 612, 58 L. ed. 1011, 42 L.R.A. (N.S.) 100.....	24
Gloucester Water Supply Co. v. Gloucester, 179 Mass. 365, 60 N.E. 977.....	179
Goezler v. Georgetown, 6 Wheat. 593.....	19
Grafton Co. Elec. Light & Power Co., In Re, 28 A.T. & T. Co., Comm. Leaflets 533.....	84, 115, 155
Grafton Co. Elec. Light & Power Co., In Re, (N.H. Sup. Ct.) P.U.R. 1917-E 345.....	156

Grafton Co. Elec. Light & Power Co., In Re, (N.H.) P.U.R. 1916-E 879.....	155, 187
Greensburg v. Westmoreland Water Co., (Pa.) P.U.R. 1917-D 478.....	118, 153, 174
Haverhill Gas Light Co., In Re, Mass. Bd. G. & E.L.C. 9 Ann. R. 90.....	136
Herman v. Newton Gas Co., (N.Y. 1st Dist.) P.U.R. 1916-D 825.....	164, 167, 173
Hill v. Antigo W. Co., 3 W.R.C.R. 623.....	79
Holyoke, City of, v. Holyoke Water Power Co., Ann. Rep. Mass. G. & E. Light Comm. 1903, p. 77-82	179
Indianapolis Water Co., In Re., P.U.R. 1917-E 556.....	118, 146
Indianapolis Water Co., In Re., P.U.R. 1919-A 448.....	112, 115
Interstate Commerce Comm. v. Chicago Gt. Western R. Co., 14 Fed. 1003.....	84
Janesville Water Co., In Re, (Wis.) P.U.R. 1915-A 178.....	199
Joplin & Pittsburg Ry. Co., In Re, (Mo.) P.U.R. 1919-B 366	174
Kansas City Elec. L. Co., In Re, (Mo.) P.U.R. 1917-C 728.....	118
Kennebec Water Dist. v. City of Waterville, 97 Me. 185, 54 Atl. 6.....	101, 179
Kings County L. Co. v. Willcox, 156 App. Div. N.Y. 603.....	63
Knott v. Chicago, B. & Q. R., 230 U.S. 474, 33 Sup. Ct. 975.....	74
Knoxville v. Knoxville Water Co., 212 U.S. 1, 29 Sup. Ct. 149.....	90, 121, 203, 222
LaCrosse Gas & E. Co., In Re, 8 W.R.C.R. 138.....	130
Lake Forest v. Lake Forest Water Co., I.P.U.C. No. 2343 and 2275, P.U.R. 1915-D 1008.....	38, 106
Lake Shore & M.S. Ry. Co., I.P.U.C. No. 2495.....	38
Lake Shore & M.S. Ry. v. Ohio, 173 U.S. 285, 19 Sup. Ct. 465, 43 L. ed. 702.....	20
Lamar v. Intermountain R.L. & P. Co., (Col.) P.U.R. 1918-B 86.....	174, 213
Landon v. Lawrence, (Kan.) P.U.R. 1916-B 331.....	136
Laurel Fork & S.H. R. Co. v. West Virginia T. Co., 25 W. Va. 324.....	19
Lima v. Lima T. & T. Co., (Ohio) P.U.R. 1916-E 670	166, 174, 206
Lincoln v. Lincoln Water & Light Co., I.P.U.C. No. 2496, P.U.R. 1917-B 1. 95, 99, 103, 108, 110, 112, 115, 117, 162, 168, 173, 174, 199.....	123
Lincoln Gas & Elec. Light Co. v. Lincoln, 223 U.S. 349.....	230
Little York Elec. Co., 5 Ill. P.U.R. 80.....	136, 166
Los Angeles, In Re, (Cal.) P.U.R. 1916-F 593.....	224
Louisville & N. R.R. v. Brown, 123 Fed. 946.....	33
Louisville & N. R.R. v. Kentucky, 183 U.S. 503, 22 Sup. Ct. 95....	111, 146
Louisville & N. R.R. v. R.R. Comm., 196 Fed. 800.....	
Manitowoc W.W. Co., In Re, 7 W.R.C.R. 71.....	63, 79, 88, 131, 159
Mantua Twp. v. New Jersey Gas Co., (N.J.) P.U.R. 1916-C 163....	164
Marbury v. Madison, 1 Cranch 137, 2 L. ed. 60.....	50
Marin Municipal Water Dist., In Re, (Cal.) P.U.R. 1915-C 433.....	134, 154
Marquis v. Polk County Tel. Co., (Neb.) P.U.R. 1915-C 140.....	108

TABLE OF CASES

247

Mayhew v. Kings County L. Co., 2 P.S.C. (1st Dist.) N.Y. 659	63, 88, 158, 169, 194
McCullough v. Brown, 41 S.C. 247	21
Meek v. Consumers' Elec. L. & P. Co., (Mo.) P.U.R. 1915-A 956	169
Memphis Cotton Oil Co. v. I.C.R. Co., 17 I.C.C. 313	84
Mercantile Trust Co. v. Texas & P. Ry. Co., 51 Fed. 529	177
Metropolitan St. Ry. Co., In Re Reorganization, 3 P.S.C. (1st Dist.) N.Y. 113	170, 173, 177
Michigan C.R.R. v. Michigan R.R. Comm., 236 U.S. 615, 59 L. ed. 750	20
Michigan State Tel. Co., In Re, (Mich.) P.U.R. 1918-C 81	179
Middlesex & Boston Rate Case, In Re	116
Minnesota & St. L. R.R. v. Minnesota, 186 U.S. 257, 46 L. ed. 1151, 22 Sup. Ct. 901	31, 73
Minnesota Rate Case (1st) 134 U.S. 418, 10 Sup. Ct. 462	52, 54
Minnesota Rate Case, 230 U.S. 352, 33 Sup. Ct. 729	73, 84, 123, 124, 145, 147, 150, 152, 181
Minnesota Rate Case, 184 Fed. 765	169
Mississippi River & B.T.R. Co., In Re, (Mo.) P.U.R. 1918-C 321	174
Missouri, Kans. & Texas Ry. Co. v. Love, 177 Fed. 493	223
Missouri Rate Case, 230 U.S. 471	74
Missouri Southern R. Co., In Re, (Mo.) P.U.R. 1916-C 607	166, 177, 206
Monahan v. Pacific G. & E. Co., (Cal.) P.U.R. 1916-B 609	105
Monmouth Pub. Serv. Co., 5 Ill. P.U.R. 229	230
Monongahela Navigation Co. v. United States, 148 U.S. 312, 13 Sup. Ct. 622, 37 L. ed. 463	190
Monongahela Water Co., In Re, 223 Pa. St. 323, 72 Atl. 625	179
Monroe Independent Tel. Co., (Neb.) P.U.R. 1917-E 471	117
Montpelier & Barre L. & P. Co., In Re, P.U.R. 1916-B 973	156
Mountain States Tel. & Telg. Co., In Re, (Col.) P.U.R. 1917-B 198	166, 167
Municipal League v. Pacific G. & E. Co., 21 A. T. & T. Co. Comm. Leaf. 699	146
Munn v. Illinois, 94 U.S. 113, 24 L. ed. 72	9, 16, 45
Murry v. Pub. Utilities Comm., (Idaho Sup. Ct.) 150 Pacific 47, P.U.R. 1915-F 436	105, 204
Nash v. Page, 80 Ky. 539, 44 Am. Rep. 490	21
Nat'l Hay Ass'n v. Michigan C.R.R. Co., 19 I.C.C. 34	84
Nat'l Water Works Co. v. Kansas City, 62 Fed. 853, 10 C.C.A. 653, 27 L.R.A. 827, 27 U.S. App. 165	178
New Orleans G. Co. v. Drainage Comm., 197 U.S. 453, 25 Sup. Ct. 471	20
New York & N.E. R.R. v. Bristol, 151 U.S. 556, 14 Sup. Ct. 437, 38 L. ed. 269	20
New York, Ontario & Western Ry. Co. v. Shaw, 143 N.Y. App. Div. 811, 128 N.Y. Sup. 177	150
Norfolk & W. Ry. v. Conley, 236 U.S. 605, 49 L. ed. 745	32
North Coast Water Co., (Cal.) 26 Comm. Leaf. 1161	146
North E. Kans. R. Co., (Kans.) P.U.R. 1916-B 925	32
Northampton Co. Water Co., (Pa.) P.U.R. 1917-E 939	14
Northern Pacific Ry. Co. v. Duluth, 208 U.S. 583, 28 Sup. Ct. 341, 52 L. ed. 630	20
Northern Pacific Ry. v. N. Dakota, 236 U.S. 585, 59 L. ed. 735	31, 32, 73

Ocean County Elec. Co., (N.J.) P.U.R. 1916-D 77.....	156
Ocean County Elec. Co., (N.J.) P.U.R. 1915-B 601.....	173
Oklahoma Gin Co. v. Oklahoma.....	84
Olcott v. Supervisors, 16 Wall 693, 21 L. ed. 382, 83 U.S. 678.....	10, 16
Omaha v. Omaha Water Co., 218 U.S. 180, 30 Sup. Ct. 615 63, 88, 179, 182	175
Omaha & L.R. & L. Co., (Neb.) P.U.R. 1915-B 416.....	175
Omaha W.W. Co. v. Omaha, 218 U.S. 180, 54 L. ed. 991, 30 Sup. Ct. 615.....	175
Oregon R. & Nav. Co. v. Clausen, 116 Pac. 7.....	63
Oshkosh Water Works Plant, In Re, 12 W.R.C. R.602.....	88, 134, 159
Oshkosh W.W. Co. v. R.R. Comm., 152 N.W. 859, P.U.R. 1915-D 336.....	63
Palo Alto Gas Case, 10 Rate Research 93.....	202
Pearsall v. G. Northern Ry., 161 U.S. 646, 16 Sup. Ct. 705.....	20
Peck v. Indianapolis Lighting & H. Co., (Ind.) P.U.R. 1916-B 445.	154
Peik v. Chicago & N.W. Ry. Co., 94 U.S. 164, 24 L. ed. 97.....	9, 46
Pennsylvania R.R. Co. v. Philadelphia, 220 Pa. St. 100, 68 Atl. 676, 15 L.R.A., (N.S.) 108.....	224
People v. N.Y.C. & H. R.R., 28 Hun., (N.Y.) 543.....	16
People ex rel. Jamaica Water S. Co. v. Tax Comm. 196 N.Y. 39....	224
People ex rel. Kings Co. L. Co. v. Pub. Serv. Comm. 210 N.Y. 479.	203
People ex rel. New York, Ontario & W. Ry. Co. v. Shaw, 143 App. Div. N.Y. 811, 128 N.Y. Supp. 177.....	177
Petaluma & S.R. Co., (Cal.) P.U.R. 1915-C 742.....	168, 193, 194
Piercy v. Citizens G., E. & H. Co., (Ill.) I.P.U.C. No. 4896.....	107
Pillsbury v. Peoples Gas Light Co., 4 N.H. P.U.C. 391.....	189
Pine Lawn v. W. St. Louis Water & L. Co., P.U.R. 1917-B 679 118, 134, 167, 174	174
Planters' Compress Co. v. Cleveland, C.C. & St. L. Ry. Co., 11 I.C.C. 382.....	84
Planters' Compress Co. v. Mo., K. & T.R. Co., 11 I.C.C. 606.....	84
Portage v. Portage Water Co., (Pa.) P.U.R. 1917-D 17.....	118
Portland R. Light & P. Co., (Or.) P.U.R. 1916-D 976 106, 117, 154, 155, 166, 206	156
Portland R. Light & P. Co., (Or.) P.U.R. 1917-D 962.....	174, 211
Potomac Elec. Power Co., (D.C.) P.U.R. 1917-D. 563.....	14
Poy Sippi Tel. Co., (Wis.) P.U.R. 1917-B 469.....	20
Pub. Serv. Comm. v. Helena, 52 Mont. 527.....	154
Pub. Serv. Comm. v. Pacific P. & L. Co., (Cal.) P.U.R. 1915-A 88	156
Pub. Serv. Comm. v. Pacific P. & L. Co. (Wash.) P.U.R. 1916-B 86	110
Pub. Serv. Comm. v. Pacific T. & T. Co., (Wash.) P.U.R. 1916-D 947	174
Pub. Serv. Comm. ex rel. Seattle v. Lighting Co., (Wash.) P.U.R. 1915-B 135.....	88
Public Service G. Co. v. Pub. Ut. Comm., 87 Atl. 651, 85 N.J. 63, 79.....	32
Puget Sound T. L. & P. Co. v. Reynolds, 244 U.S. 574, 61 L. ed. 1325	
Queens Borough G. & E. Co., 2 P.S.C. (1st Dist.) N.Y. 544 63, 88, 146, 227	
Racine Water Co., (Wis.) P.U.R. 1917-D 277.....	171
Railroad Comm. v. P. & O. C. R. Co., 63 Mo. 269.....	16

<i>Railroad Comm. of Louisiana v. Cumberland T. & T. Co.</i> , 212 U.S. 414, 53 L. ed. 577.....	216
<i>Railroad Passenger Rate Case</i> , (Mass.) P.U.R. 1915-B 362.....	33
<i>Reagan v. Farmers' Loan & Trust Co.</i> , 154 U.S. 363, 14 Sup. Ct. 180, 38 L. ed. 1014.....	20, 55, 57, 58, 99, 221
<i>Reagan v. Mercantile Trust Co.</i> , 154 U.S. 413.....	55
<i>Redondo Beach, City of, In Re</i> , (Cal.) 1915-B 429.....	154
<i>Rhinelander v. Rhinelander L. Co.</i> , 9 W.R.C.R. 406.....	156
<i>Rich v. Biddeford & S. W. Co.</i> , (Me.) P.U.R. 1917-C 982.....	134
<i>Ripon v. Ripon Light & Water Co.</i> , 5 W.R.C.R. 1.....	134
<i>Rippe v. Black</i> , 56 Minn. 108.....	21
<i>Rogers Park Water Co. v. Fergus</i> , 178 Ill. 571.....	20
<i>Roundup v. Roundup Coal Mine Co.</i> , (Mont.) P.U.R. 1916-D 393.....	170
<i>Salem Tel. Co., In Re</i> , (S. Dak.) P.U.R. 1919-B 734.....	136
<i>Salinas City v. Coast Valley G. & E. Co.</i> , (Cal.) P.U.R. 1915-B 460.....	166, 199
<i>San Diego Consolidated G. & E. Co., In Re</i> , (Cal.) P.U.R. 1917-A 930.....	134
<i>San Diego L. & T. Co. v. Jasper</i> , 110 Fed. 702.....	58
<i>San Diego L. & T. Co. v. Jasper</i> , 189 U.S. 439, 23 Sup. Ct. 571, 47 L. ed. 892.....	118, 120, 131, 145
<i>San Diego L. & T. Co. v. Nat'l City</i> , 74 Fed. 79.....	58
<i>San Diego L. & T. Co. v. Nat'l City</i> , 174 U.S. 739, 19 Sup. Ct. 804, 43 L. ed. 1154.....	20, 58, 71, 72, 119, 145
<i>San Diego W. Co. v. San Diego</i> , 118 Cal. 556, 50 Pac. 633.....	63, 110, 134, 144
<i>San Gabriel Valley Water Co.</i> , (Cal.) P.U.R. 1916-B 895.....	134, 154
<i>San Joaquin v. Stanislaus County</i> , 191 Fed. 875.....	177
<i>San Joaquin & K. R. Canal & Irrigation Co. v. Stanislaus Power & L. Co.</i> , 233 U.S. 454, 58 L. ed. 1041.....	154
<i>San Joaquin L. & P. Corp. v. R. Comm.</i> , (Cal. Sup. Ct.) P.U.R. 1917-E 37.....	156
<i>San José Water Co., In Re</i> , (Cal.) P.U.R. 1915-D 706.....	110
<i>San Lorenzo Water Co., In Re</i> , (Cal.) P.U.R. 1915-D 1091.....	154
<i>Sandpoint v. Sandpoint Water & L. Co.</i> , (Idaho) P.U.R. 1915-F 445.....	134, 154, 204
<i>Santa Cruz, City of, In Re</i> , (Cal.) P.U.R. 1915-F 768.....	154
<i>Shepard v. No. Pacific Ry. Co.</i> , 184 Fed. 765.....	110, 133
<i>Simms v. Columbia Tel. Co.</i> , (Mo.) P.U.R. 1915-C 356.....	171
<i>Simpson v. Shepard</i> , 230 U.S. 352, 33 Sup. Ct. 729.....	73, 84, 123, 124
<i>Sinking Fund Cases</i> , 99 U.S. 700, 25 L. ed. 496.....	45
<i>Slaughter House v. Crescent City L.S.L. Co.</i> , 111 U.S. 746, 16 Wall 36.....	20
<i>Smyth v. Ames</i> , 169 U.S. 466, 18 Sup. Ct. 418, 42 L. ed. 819.....	20, 58, 59, 72, 84, 90, 123, 144
<i>Southern Minn. R.R. Co. v. Coleman</i> , 94 U.S. 181.....	9
<i>Spokane v. N. Pacific Ry. Co.</i> , 15 I.C.C. R. 376.....	136
<i>Spring Valley W.W. v. San Francisco</i> , 124 Fed. 574.....	63, 88
<i>Spring Valley W.W. v. San Francisco</i> , 192 Fed. 137.....	63, 88, 183
<i>Spring Valley W.W. v. San Francisco</i> , 165 Fed. 667.....	63, 101, 105, 190
<i>Spring Valley W.W. v. Schottler</i> , 110 U.S. 347, 4 Sup. Ct. 48, 24 L. ed. 173.....	20, 45

Springfield <i>v.</i> Springfield C. & E. Co., I.P.U.C. No. 2138, P.U.R. 1916-C 281	95, 99, 110, 112, 115
Stanislaus County <i>v.</i> San Joaquin & King's River Canal & Irrigation Co., 192 U.S. 201, 26 Sup. Ct. 241, 48 L. ed. 406	121, 221, 222
Stark County Power Co., In Re, I.P.U.C. No. 6704	88
Stark County Tel. Co., In Re, 5 I.P.U.C. 63	89
State ex rel. <i>v.</i> Clausen, 116 Pac. 7	63
State ex rel. <i>v.</i> Savage, 65 Neb. 714, 91 N.W. 716	63, 79
State ex rel. R.R. Comm. <i>v.</i> Seaboard Air Line Ry. Co., 48 Fla. 129, 37 So. 314	84
State Journal Printing Co. <i>v.</i> Madison G. & E. Co., 4 W.R.C.R. 501	146, 169
State P.U. Comm. ex rel. <i>v.</i> Noble, 275 Ill. 121	38
State P.U.C. Comm. ex rel. <i>v.</i> Romberg, (Ill.) P.U.R. 1917-B 355 ..	38
Steenerson <i>v.</i> Gt. Northern Ry. Co., 69 Minn. 353, 72 N.W. 713	101, 110, 133, 146
Stewart <i>v.</i> G. Northern Ry., 65 Minn. 517	21
St. Louis & S.F. R.R. <i>v.</i> Gill., 156 U.S. 649, 39 L. ed. 567, 15 Sup. Ct. 484	20, 32
St. Louis & S.F. R.R. <i>v.</i> Mathews, 165 U.S. 1, 17 Sup. Ct. 243, 41 L. ed. 611	20
St. Louis & S.F. R. Co. <i>v.</i> Hadley, 168. Fed. 317	79, 190
St. Louis R. Co. <i>v.</i> Minn., 186 U.S. 257	84
Stockton Terminal, In Re, 19 Com. L. 208	79
Stone <i>v.</i> Farmers' L. & T. Co., 116 U.S. 307, 6 Sup. Ct. 334 ..	48, 51, 53
Stone <i>v.</i> Mississippi, 101 U.S. 814, 25 L. ed. 1079	20
Stone <i>v.</i> Wisconsin, 94 U.S. 181, 24 L. ed. 102	9
Sugar Pine R. Co., In Re, (Cal.) P.U.R. 1915-A 728	99
Superior Commercial Club <i>v.</i> Duluth St. Ry. Co., 12 W.R. C.R. 1 ..	134
Talcott <i>v.</i> Pine Grove, 1 Flipp., (U.S.) 120	15
Taylor <i>v.</i> Northwest L. & W. Co., (Idaho) P.U.R. 1916-A 372	152
Terminal Taxicab Co., In Re, (D.C.) P.U.R. 1915-B 546	110, 174
Thayer <i>v.</i> Beaver Valley Water Co., (Pa.) P.U.R. 1916-E 962 ..	134, 154
Theresa U.T. Co. <i>v.</i> E. Valley T. Co., (Wis.) P.U.R. 1917-E 387 ..	38
Tighe <i>v.</i> Clinton Tel. Co., 3 W.R.C.R. 117	133
Tilley <i>v.</i> S.F. & W. Ry., 5 Fed. 641	47
Tonopah & Tidewater R. Co., In Re, (Cal.) 22 A. T. & T. Co. Com. Leaf. 1064	177
Tyrone Elec. Co., In Re, (Ill.) P.U.R. 1916-E 703	88
Union Gas & E. Co., 5 Ill. P.U.R. 205	230
Union P. R.R. <i>v.</i> P. Utilities Comm., (Kan.) P.U.R. 1915 -D 377 ..	32
Union Pacific R. <i>v.</i> United States, 99 U.S. 402, 25 L. ed. 274	203
United States <i>v.</i> Kansas Pac. Ry. Co., 99 U.S. 459	203
Valley Natural Gas Co., (Cal.) P.U.R. 1918-C	218
Valparaiso Tel. Co., (Neb.) P.U.R. 1915-E 578	136
Vega S.S. Co. <i>v.</i> Consol. E. Co., 75 Minn. 308, 77 N.W. 973, 43 L.R.A. 843, 74 Am. St. Rep. 484	21
Venner <i>v.</i> Chicago City R.R. Co., 246 Ill. 170	20
Vogt & Linden Tel. Co., (Wis.) P.U.R. 1917-A 614	14

TABLE OF CASES

251

Wabash, etc. R.R. <i>v.</i> Illinois, 118 U.S. 557	20
Warren L. & P. Co., 5 Ill. P.U.R. 72	230
Washburn <i>v.</i> Washburn Water Works Co., 6 W.R.C.R. 74	134
Washington & M.R. Co., (D.C.) P.U.R. 1915-B 558	165, 169, 173
Westchester St. Ry. In Re, 3 N.Y.P.S.C. (2d Dist.) 286	80
Western Advance Rate Case, 20 I.C.C.R. 307	110, 146
Willcox <i>v.</i> Consolidated Gas Co., 212 U.S. 19, 29 Sup. Ct. 192, 53 L. ed. 382	63, 64, 79, 88, 122, 145, 182, 192, 203, 222
Winona & St. Peter R.R. Co. <i>v.</i> Blake, 94 U.S. 181, 24 L. ed. 99	9
Wisconsin Ry. Co. <i>v.</i> Jackson, 179 U.S. 287, 45 L. ed. 194, 21 Sup. Ct. 115	33
Worcester <i>v.</i> R.R. Co., 4 Metcalf 564	16

INDEX

INDEX

- Abandoned property, 70, 129-32.
 Accounting, 43.
 Accounts, uniform, 43.
 Accrued depreciation, 197, 198-200, 215, 218.
 Accruing depreciation, 197, 198, 199, 218.
 Actual cost. *See* Original cost.
 Actual investment theory. *See* Actual value.
 Actual value, 56, 113-19.
 Adaptation, 175-77.
 Additions and betterments, 28, 134-36, 208.
 Adequacy of service, 15, 28, 40.
 Adjacent land value, 139, 145.
 Age of plant, 206-07.
 Aims of regulation, 20-25, 27-44, 92.
 Aims of valuation, 56.
 Alvord's reproduction cost theory, 101-04.
 Amortization, 165.
 Analogy. *See* Condemnation analogy.
 Annuity method of estimating depreciation, 210-11.
 Anti-monopoly regulation, 33-34.
 Antiquated property, 129-32.
 Appraisals, 94-96.
 Appreciation, 141-45.
 Architects' fees, 170.
 Assessed value of land, 139-40.
 Attempt to discredit original cost, 107-12.
 Average buildings, 151-52.
 Average prices. *See* Unit costs.

 Ballast, 176.
 Banks, regulation of, 12.
 Basis of regulation, 1-26, 28.
 Beginning of operations. *See* Organization costs.
 Betterments, 28, 134-35, 137, 208.
 Bonds:
 discount on, 173-75;
 disregarded in rate valuation, 61.

 Book value, 91, 97.
 Branch lines, return on, 32.
 Bridges, regulation of, 10.
 Brokerage, 173-74.
 Buildings, valuation of, 151-53.
 Buildings used only in part for service, 153.
 Business profits. *See* Return.
 Bus lines, 18.

 Canals, 10, 17.
 Capitalization:
 accounting and capitalization, 43;
 consolidation, 43;
 of earnings, 80;
 over-capitalization, 91;
 purchase and sale, 43;
 regulation of, 43;
 reorganization, 43;
 valuation based on, 91, 92.
 Capitalization of earnings, 80, 89.
 Charges for service. *See* Rates.
 Charters, early, 6.
 Commercial value. *See* Exchange value.
 Commission Cases, 48-51.
 Common law, 5, 10, 12, 46.
 Communication service, public character of, 18.
 Comparative plant, 105-06.
 Competition:
 and appreciation, 141-43;
 and speculation, 39-41;
 as a regulatory force, 13, 34, 36-39;
 duplication, 13, 17, 36;
 effect on prices, 35-39;
 fostered during anti-monopoly period, 34;
 reason for change to monopoly, 34-39;
 regulatory power of, 14, 35;
 waste of, 13, 17, 36, 57.
 Compromise reproduction theory, 106.
 Condemnation, 63-73.

- Condemnation analogy:
 and going value, 64, 178;
 application of, 63-73, 145;
 growth of, 57-59, 74;
 origin of, 57;
 theory of, 57-59, 63-73.
- Condemnation theory. *See* Condemnation analogy, Due process, etc.
- Condemnation value, 63-73.
- Confiscation. *See* Due process.
- Confusion in valuation, 45, 67, 76, 138-39.
- Consolidation, 43.
- Construction cost:
 architects' fees, 170-71;
 contingencies, 147-49;
 contractors' profits, 172-73;
 engineering fees, 161, 163, 165, 170-72;
 insurance, 161, 170;
 legal expense, 167;
 multiples, 148-51;
 organization expense, 166-67;
 piecemeal construction, 175-76;
 promoters' profits, 167-68;
 supervision, 163, 170-72;
 taxes, 161, 170.
- Construction period, 168-69.
- Contingencies, 147, 148, 150.
- Continuous service, 15, 28, 40.
- Contractor's profit, 172-73.
- Contracts, 152-54.
- Corporations, 54.
- Cost. *See also* Reproduction cost, Original cost, etc.
 rate valuation determines cost, 81.
- Cost of production, 49, 56, 61, 72.
- Cost of reproduction. *See* Reproduction cost.
- Cost of service, 56, 81, 84, 85.
- Circle. *See* Vicious circle.
- Current repairs. *See* Maintenance.
- Damages. *See* Multiples.
- Deferred maintenance. *See* Depreciation.
- Depreciation:
 a cost element, 197-98;
 accrued, 197, 198, 199-200, 214-15, 218;
 accruing, 197, 198, 200, 218;
 and efficiency, 198-202;
 and the courts, 202-04;
 annuity method, 210-11;
 buildings, 152;
 Colorado theory, 213-15;
 confusion with efficiency, 198-202;
 defined, 196;
 diminishing balance method, 209-10;
 estimated life, 206-07;
 functional, 196-97;
 intangibles, 288-89;
 judicial holdings on, 202-04;
 maintenance plan, 207;
 miscellaneous methods, 212-13;
 of intangibles, 205-06;
 physical, 196;
 problem of, 198;
 reserve for, 196, 215-18;
 salvage value, 204-05;
 sinking-fund method, 211-12;
 straight-line method, 207-09;
 theory of, 196, 198.
- Depreciation of overheads, 165.
- Depreciation reserve, 197-98, 215-18.
- Deterioration, 196.
- Development expenses, 166-67.
- Development of regulation, 4.
- Difference between inventory, appraisal, and valuation, 95.
- Diminishing balance method of depreciation, 209, 210.
- Discarded property, 129-32.
- Discounts. *See* Bond discounts.
- Discrimination, 8, 29, 82.
- Donations, 133-34.
- Due process:
 application to rate-making, 23, 49, 74;
 Commission cases, 48-51;
 confiscation, 23, 63-73;
 Granger cases, 9, 45-48;
 operation at a loss, 83;
 theory of, 49-50.
- Duplication, 13, 15, 17, 36-39.
- Early charter provisions, 7.
- Earnings capacity:
 in purchase and sale cases, 88-90;
 in rate cases, 49, 90.

Earnings, 49.

Economic factors in valuation, 77.

Economic management, reward for, 81, 229-31.

Economic value, 78, 81, 92.

Economist, sphere of, in valuation, 94, 95.

Efficiency:

and depreciation, 41, 198-202;
economic management, 41-42, 229-31;

false capitalization, 41;

necessity for, 41-42;

operating expenses, 41;

reward for, 41, 81, 229-30;

salaries, 42.

Electric plant as a utility, 19.

Emergency use, 131-32.

Eminent domain:

and rate-making, 63-73;

compared with police power, 66;

condemnation theory of valuation, 63-73.

Encumbrance of regulation, 11, 26, 82.

Engineer, sphere of, in valuation, 94.

Engineering costs, 161, 163, 165, 170-72.

Equally efficient plant, 105-07.

Established business, cost of. *See* Overhead costs.

Estimated life, 206-07.

Estoppel to deny fair return, 86.

Excessive investment, 131-32.

Exchange value:

difference between rate and exchange value, 81;

fair value not exchange value, 80-82;

limited by regulation, 92;

value defined, 77.

Expert witnesses as to land value, 138-39.

Express service, 18.

Facilities:

donated by consumer, 133, 135;

rules requiring installation, 41.

Factory system and *laissez-faire* policy, 8.

Fair return:

allowance for surplus, 231;

and the court, 220-22;

development of return question, 220-22;

duplication in valuation and return, 229-30;

economic management, 230-31;

elements involved in return, 222-23;

interest element, 223-25; }

rate of return, 227-28;

risk element, 225;

surplus, 231;

valuation and the return, 220.

Fair value. *See also* Valuation, Original cost, etc.

a legal concept, 45, 81;

and regulation, 45-76;

as a test for individual rates, 73;

condemnation analogy, 57-59, 63-73;

confusion regarding, 45, 67, 74;

for capitalization, 42, 79;

for purchase and sale, 42, 79, 88-90;

for rate-making, 81-88;

for taxation, 79-80, 82;

investment theory of, 87-88, 113-19;

meaning of value, 77-79, 82;

not exchange value, 80-81;

of service, 72;

rate-making value, 81-88;

theories of value, 96;

varying uses of, 79-80.

Ferries, regulation of, 10.

Fifth Amendment, 49.

Fillings, 141.

Financial regulation, 42-43.

Formula, none for valuation, 125.

Fourteenth Amendment, 28, 44, 46, 49, 63-73, 92, 94, 98, 144, 145, 220.

Franchises, early policy regarding, 7.

Franchise value, 189-93.

Functional depreciation, 196, 203.

Future:

construction for, 129, 131-32;

requirement of, 131;

water rights held for, 154.

- Gas plant, a utility, 19.¹
 Gifts, 183, 185.
 Going-concern value, 180-81.
 Going value:
 and courts, 188-89;
 and exchange differential, 181-82;
 and return, 230;
 comparative plant estimate, 186-88;
 good-will, 182-84;
 in general, 179-81;
 methods of estimating, 179;
 not allowed as a separate element, 81, 186;
 origin of dispute, 178;
 past deficits, 184-86;
 Wisconsin rule, 184-86, 187.
 Good-will, 182-84.
 Government control, 21-25.
 Government, powers of. *See* Rate-making power.
 Governmental function theory of regulation, 19-25, 82.
 Grading, 141.
 Granger cases, 9, 45-48.
 Granger movement, 8.
 Grants, 7.
 Heating service, public nature of, 19.
 Highways, comparison of railways with, 10.
 Hypothesis. *See* Reproduction cost.
 Hypothetical expenses. *See* Reproduction cost.
 Identical plant. *See* Substitute plant.
 Improvements. *See* Additions and betterments.
 Inadequacy. *See* Functional depreciation.
 Income. *See* Return.
 Individualism, 4, 7.
 Individual rates, 73.
 Inns, 17.
 Insurance, 161, 170-71.
 Insurance companies, regulation of, 12.
 Intangible property:
 adaptation, 176-77;
 architects' fees, 170;
 attitude of court, 188-89;
 ballast, 176-77;
 comparative plant estimate, 186-88;
 contingencies, 147-48;
 defined, 161;
 depreciation of, 165, 205-06;
 discount on bonds, 173-75;
 engineering, 170-72;
 exchange differential, 181-83;
 franchise value, 189;
 going-concern value, 179-81;
 going value, 177, 189;
 good-will, 182-84;
 insurance, 170;
 interest during construction, 167-70;
 multiples, 148-51;
 organization expenses, 166-67;
 outlined, 162;
 overhead charges, 161-65;
 past deficits, 184-88;
 piecemeal construction, 175-79;
 promoters' profits, 166-67;
 seasoning, 176;
 solidification, 175-79;
 superintendence and engineering, 170-72;
 taxes, 170;
 Wisconsin rule, 184-86.
 Interest during construction, 161, 167-70.
 Interest element of return, 223-25.
 Inventory, 94-96.
 Invested surplus, 135-38.
 Investment, basis of valuation, 86-88.
 Jeffersonian dispute, 50.
 Judicial legislation, 49-50.
 Judicial limitation on rate-making. *See* Judicial review.
 Judicial recognition of public interest, 15-20, 29-31.
 Judicial review, 50, 53, 55.
 Junk value, 132.
 Jurisdiction of court in rate cases, 50, 59.
 Laissez-faire policy:
 effect on court decisions, 6, 49;

- in early American law, 6;
in general, 6, 27, 49;
Munn case limits, 11; '
reason for, 7.
- Land grants. *See also* Public aid.
not valued, 71;
trust theory applied to, 71.
- Land value:
appraiser method, 138, 139;
appreciation, 141-46;
buildings on the land, 140-41;
local expert method, 138-39;
market value, 139, 146;
original cost appraisal, 140;
reproduction cost appraisal,
146-51;
sales method, 138-39.
- Legal expenses, 161.
- Legal monopoly, 14.
- Legislative power over rates, 49-
50, 59-63, 74.
- Life of plant, 205-06.
- Lighting service, public nature of,
19.
- Limitation on social side of regula-
tion, 29-33.
- Limitation on original cost, 56, 72.
- Limitation on rate of return, 227-
28.
- Limited necessities, supplying is a
public service, 19.
- Local expert land valuation, 138-
39.
- Losses, 184-86.
- Mains, pavement over. *See* Paving.
- Maintenance, 28, 197-98, 207.
- Maintenance plan of depreciation,
207.
- Management, 41-42, 81.
- Market value, 61, 90-91, 151.
- Market value of securities, 61, 73,
90-91.
- Maximum rate laws, 33, 56.
- Methods of valuation, 90.
- Minimum limit on rate-making,
56, 61.
- Monopoly:
anti-monopoly regulation, 12,
33-34;
as basis for regulation, 11-15;
does not create utility, 12;
does not explain purpose of
regulation, 13;
early regulation of, 12;
effect of, 13;
government regulation of, 12;
legal, 13;
natural, 14 n.;
price, 12, 17;
profits, 12;
reason for acceptance of, 14,
36-39;
recognition of, 34-36;
restraint of, 12.
- Monopoly price, 12.
- Monopoly profits, 12, 23, 34.
- Multiples, 148-51.
- Munn case, 9, 11, 15.
- Natural monopoly, 14 n., 36.
- Necessity for regulation, 15.
- Non-competitive rates, 33.
- Non-operating property, 129-32.
- Normal cost theory, 106-07.
- Normal price, 35.
- Obsolescence, 196.
- Operation at a loss, 83.
- Options. *See* Contracts.
- Organization cost, 166-67.
- Original cost:
actual cost, 56;
attempt to discredit, 107-12;
attitude of courts toward, 110-
12;
book value, 97;
defined, 97-99;
difficulty in applying, 108;
estimation of, 109;
limitation on, 56, 72;
narrow use of term, 91;
objected to by utilities, 107-
12;
reasonable cost, 56;
Smyth v. Ames, 109-12;
theory of, 97-99.
- Original-cost-to-date, 98.
- Over-capitalization, 92, 147.
- Overhead charges:
adaptation and solidification,
175-77;
architects' fees, 170;
attitude of court, 188-89;
ballast, 176;
book value of overheads, 161;
comparative plant estimate,
186-88;

- contingencies, 147-49;
 - contractors' profits, 171-73;
 - depreciation of overheads, 165;
 - discount on bonds, 173-75;
 - duplication in allowance for overheads, 161, 162-63;
 - engineering fees, 161, 163, 165, 170-72;
 - franchise value, 189-93;
 - going-concern value, 179-81;
 - going value, 177-79;
 - going value and courts, 188-89;
 - going value and exchange differential, 181-82;
 - going value, Wisconsin rule, 184-86;
 - good-will, 182-84;
 - insurance, 161, 170;
 - interest during construction, 161, 167-70;
 - legal expenses, 161;
 - list of overheads, 162-63;
 - multiples, 148-51;
 - organization expenses, 166;
 - past deficits, 184-86;
 - piecemeal construction, 175-76;
 - promoters' profits, 166-67;
 - reproduction cost estimate of, 161, 164-65;
 - seasoning, 176;
 - solidification and adaptation, 175-77;
 - supervision, 163, 170-72;
 - taxes, 161, 170;
 - Wisconsin rule for going value, 184-86.
- Past deficits, 184-86.
- Past profits. *See* Profits.
- Patrons of Husbandry, 9.
- Paving:
- actual cost, 157;
 - not actually cut, 157-58;
 - original cost appraisal, 157-58;
 - reproduction cost appraisal, 113, 157-59.
- Physical depreciation, 196.
- Physical plant. *See* Tangible property.
- Piecemeal construction, 164-65, 172, 175-76.
- Pioneer risk, 226-27.
- Pipe lines, 18.
- Pipes, paving over. *See* Paving.
- Pleading and practice in rate cases, 69.
- Police power:
- cannot be contracted away, 16;
 - compared with eminent domain, 66, 75;
 - effect on property, 4;
 - extent of, 66, 70;
 - limitation upon, 66, 70, 74;
 - necessary, 16;
 - negative character of, 27;
 - public interest, 4, 15;
 - purpose of, 19-20;
 - restrictive nature of, 27;
 - similar to eminent domain, 66.
- Possession distinguished from property rights, 4.
- Preliminary expenses, 161, 165-73.
- Present value. *See* Fair value, etc.
- Price economics, 7.
- Private ownership, 4, 31, 33, 84.
- Private property. *See* Property.
- Profits:
- and return, 224;
 - and surplus, 135;
 - limits on, 11, 82;
 - past profits, 82;
 - public interest in, 11;
 - regulation of, 33, 56.
- Promotion, 7.
- Promotion expenses, 166-67.
- Property:
- abandoned, 70;
 - acquired from surplus, 134-38;
 - acquired without cost, 133-34;
 - and the state, 3, 19;
 - appreciation, 141-46;
 - a social institution, 4, 11;
 - buildings, 151-53;
 - bundle of rights theory, 3, 11, 143;
 - constitutional safeguards, 28, 44, 46, 49, 143-44;
 - contracts, 153;
 - definition of private property, 3;
 - destroyed by regulation, 27;
 - distinguished from possession, 4;
 - donated, 133-36;

- economic status of private property, 3;
 encumbrance of control, 11, 82;
 held for emergency, 131;
 held for future needs, 132;
 intangible, 129;
laissez-faire doctrine, 6-7;
 land, 138;
 legal status of, 3, 83;
 limitation on use of, 3, 4, 11;
 not used or useful, 70, 129-32;
 origin of, 4;
 original cost, 140-41;
 paving, 157-59;
 private, 3-5;
 property rights, 3-5;
 public interest in, 4, 11, 16, 29-31;
 rate-making a limitation on, 11, 27, 82;
 regulation and, 5;
 sanction of government necessary to, 4;
 social side of, 4, 11, 16;
 two sides of, 4, 11;
 uses of, 5;
 water rights, 153-56.
- Property rights, 3-5.
 Prospecting, 161.
 Provision for future, 132.
 Public aid, 7.
 Public interest, 3, 15-20, 29-31.
 Public utilities:
 abuse of privileges, 7-9;
 ancient utilities, 17;
 classified separately by common law, 5;
 development of, 5;
 early need of, 6;
 early utilities, 6;
 governmental nature of, 19-25;
 importance of, 6;
 interest not antagonistic to that of public, 29;
 laissez-faire policy, 6;
 monopolistic, 14;
 need for, in early days, 6;
 regulation of. *See* Regulation; under common law, 6.
- Purchase and sale:
 amortization of excess, 42;
 partial sale, 42;
 price limited by rate value, 42, 82;
 regulation of, 42;
 sale price, 42;
 valuation for, 79, 82.
- Purpose of regulation, 23, 27-44, 60, 73.
- Purpose of reproduction cost appraisal, 105-07.
- Rate basis. *See* Valuation for rate-making.
- Rate-making power:
 aim of, 29, 83;
 Commission cases, 48-51;
 Granger cases, 9;
 limitation on, 29-33, 74, 83;
 limitation on other regulation, 28;
 limitation on property, 27, 82;
 Regan case, 55-57;
 valuation as base of, 81-88.
- Rate of return:
 adjustment to social needs, 32;
 allowance for surplus, 231;
 and the courts, 221-22;
 branch line, 31;
 constitutional requirement, 83;
 development of return question, 221-22;
 duplication in valuation and return, 229-30;
 economic management, 81;
 elements involved in return, 222-23;
 interest element, 223-25;
 limits on return, 227-28;
 must be met on each rate, 31-33, 73;
 rate of return, 32, 83, 227-28;
 risk element, 225;
 surplus, 230;
 valuation and the return, 83, 220.
- Rate regulation, 29-33, 41, 92.
- Rate value, 83-88.
- Rates, 23, 29-33.
- Real estate. *See* Land value.
- Reasonableness:
 arbitrary, 23, 83;
 legislative question, 23, 59, 61;
 original cost, 56, 61, 72;
 test of, 23, 84, 220-21.

- Rebates, 8, 29.
- Recognition of regulated monopoly, 34-36.
- Regulation:
- accounting, 43;
 - aim of, 23, 27, 44, 83;
 - an encumbrance on private property, 11, 26, 82;
 - basis of, 11, 23, 28;
 - competition, 35, 36-39;
 - destructive, 27;
 - early, 4;
 - effect on private property, 4, 5, 26, 27-28;
 - encumbrance on private property, 11, 26, 82;
 - financial, 28, 42-43;
 - limitation on. *See* Rate-making power;
 - monopoly as basis, 11;
 - negative in character, 27;
 - public interest, 4, 11, 29-31;
 - purpose of, 23, 27-44, 60, 71;
 - rate of return, 32;
 - rates, 28, 29, 33, 45;
 - restrictive, 5, 26, 27;
 - service requirements, 28;
 - social side of, 4, 29-31;
 - speculation, 39-41.
- Renewals, 198, 206-07.
- Reorganization, 43.
- Repairs, 28, 198, 206-07.
- Replacement cost. *See* Reproduction cost.
- Replacements. *See* Depreciation.
- Reproduction cost:
- a check on original cost, 105;
 - Alvord's theory of, 102-04;
 - Ames case theory, 104;
 - attitude of court, 111-12, 119-24;
 - compromise theory, 106-07;
 - defects of, 112-13;
 - development of the theory, 100-05;
 - economic value, 81-82;
 - market value, 81-82;
 - Minnesota Rate case, 123-24;
 - normal cost, 107;
 - origin of the reproduction theory, 92, 99;
 - paving, 112-13, 157-59;
 - purpose of reproduction cost appraisal, 105-07;
 - strained theory, 111-13;
 - substitute plant, 105-06;
 - Supreme Court and, 119-24;
 - three theories of, 99-100.
- Reserve for depreciation, 206-07, 215-18.
- Return. *See* Rate of return.
- Reward for economic management, 81.
- Risks of business, 142, 225-26.
- Road bed. *See* Solidification.
- Rules of valuation, 95, 179.
- Sales and assessor method, 138-39.
- Sales method of valuing land, 138-39.
- Salvage value, 204.
- Saving-over-coal value of water rights, 155-56.
- Scrap value. *See* Salvage value.
- Seasoning, 176.
- Securities, 43.
- Service, 15, 28, 40.
- Service, value of, 72, 83-85.
- Services, installed by consumer, 134-35.
- Sinking-fund method of depreciation, 211-12.
- Social sacrifice principle, 57.
- Social side of private property, 4, 11, 16.
- Social side of regulation, 4, 11, 16, 29-33.
- Social welfare, 29-33.
- Solidification, 176-77.
- Speculation, 8, 39-41, 142.
- Springs. *See* Percolating waters.
- Standard of living, 30.
- State aid, 7.
- State regulatory power. *See* Police power.
- Stocks. *See* Capitalization.
- Storage, 19.
- Straight-line method of depreciation, 207-09.
- Subsidies, 31.
- Substitute plant theory, 105-06.
- Substitute service, 36.
- Superintendence, 163, 170-72.
- Surplus:
- allowance for, in return, 231;
 - invested, 135-38;
 - property acquired from, 134, 135-38.

- Tangible property:**
 acquired from surplus, 134, 138;
 acquired without cost, 133-38;
 appreciation, 141-46;
 buildings, 151-53;
 contracts, 153;
 defined, 129;
 land, 138;
 not used or useful, 129;
 original cost, 140-41;
 paving, 157-59;
 reproduction cost, 146-51;
 water rights, 152-57.
- Taxes, 161, 170.**
- Tax value, 79.**
- Telegraph and telephone, 18.**
- Temporary structures, 141.**
- Threat prices, 12.**
- Title not taken in rate-making, 66.**
- Transportation service, public character of, 19.**
- Transportation system, importance of, 6, 17.**
- Trust theory applied to land grants, 71.**
- Turnpike, regulation of, 10, 18.**
- Unearned increment. *See* Appreciation.**
- Unit costs, 35.**
- Unused property, 70, 95, 129-32.**
- Valuation. *See also* Overhead charges, Depreciation, etc.**
 actual investment theory, 56, 113-19;
 a judicial theory, 45;
 a legal concept, 45, 81;
 and economics, 77;
 and regulation, 45-76;
 an encumbrance, 27, 82-83;
 appraisal, 94;
 as a test for individual rates, 73;
 as cost finding, 81;
 capitalized earnings, 82;
 condemnation analogy, 57-59, 63-73, 76;
 confusion in, 45, 67, 78;
 destructive effect of, 27, 83;
 development of, 52, 56, 74-76;
 economic features of, 57, 80-82, 94-95;
 engineering features of, 94;
 exchange value, 78, 80-81, 82;
 fair value, 80-81;
 final valuation, 94-96;
 for capitalization, 79;
 for purchase and sale, 79, 82, 87-90, 191-93;
 for rate-making, 79, 81-88, 191-93;
 for taxation, 79-80, 82, 191;
 growth of, 74;
 inventory, 94-100;
 investment theory, 86-87, 154, 113-19;
 legal features, 94;
 market value, 82;
 meaning of value, 77-79;
 methods, 90-92;
 objective value, 78;
 of reproducible objects, 99;
 origin of valuation, 56;
 original cost, 97-99, 107-15;
 practice, 96;
 purpose of, 71;
 rate-making value, 81-88;
 reproduction cost, 99-107, 112-13, 119-24;
 steps in, 94;
 subjective value, 78;
 theories of value, 96;
 varying uses of, 79-80.
- Value:**
 defined, 78;
 economic value, 78, 80-81, 92;
 kinds of, 79;
 legal value, 80-81.
- Value of property. *See* Fair value, etc.**
- Value of service, 72, 81, 84-85.**
- Vested rights. *See* Due process.**
- Vicious circle, 64, 82.**
- Warehouses, regulation of, 10-11, 19, 45.**
- Waste of competition, 13, 17, 36, 57.**
- Water power. *See* Water rights.**
- Water rights, 152-56.**
- Waterways, 17.**
- Water work, public character of, 17.**
- Wear, 197.**
- Wells, public, 17.**
- Wharfinger, public nature of his service, 19.**
- Wisconsin rule for going value, 184-86.**
- Working capital, 161, 193-94.**
- Worth of service, 57, 83, 84-85.**

The Riverside Press

CAMBRIDGE . MASSACHUSETTS

U . S . A

UC SOUTHERN REGIONAL LIBRARY FACILITY



AA 000 895 271 5

SOUTHERN BRANCH
UNIVERSITY OF CALIFORNIA
LIBRARY
LOS ANGELES CALIF.

